

TECHNOLOGY

REVIEW *November 1954*

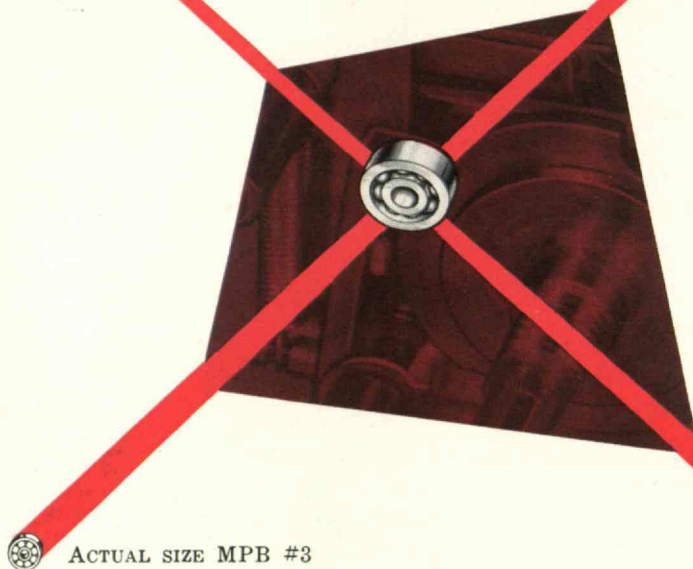


technology review

Published by MIT

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HOW MPB bearings solve miniaturization problem for Bendix Radio



ACTUAL SIZE MPB #3

MPB ball bearing used as Index Pawl in miniature frequency selector switch

OPERATING CONDITIONS — miniature ball bearing serves as index pawl in 4-position indexing device . . . bearing travels at 936 r.p.m. CRITICAL — low starting torque, low friction rotation . . . high impact loads . . . long, trouble-free bearing life. RESOLVED — by use of MPB No. 3, .1875" o.d. full-race bearing.

To quote Mr. John F. Wroten, Jr., mechanical engineer with Bendix Radio Division, these are some of the reasons why MPB bearings were selected in the miniaturization of their frequency selector switch: "The low friction rotation of the bearing practically eliminates drag in the indexing action, and reduces to a minimum the amount of power required for disengagement. Also, the bearing displays unusually high resistance to the frequent impact loads a detent stop of this kind must withstand Because rolling contact occurs between the pawl and the plate, the plate can be made of soft stainless steel."

For problems involving miniaturization, consult MPB, pioneer manufacturer of miniature ball bearings.

Miniature Precision Bearings, Inc., 103 Carpenter St., Keene, N. H.



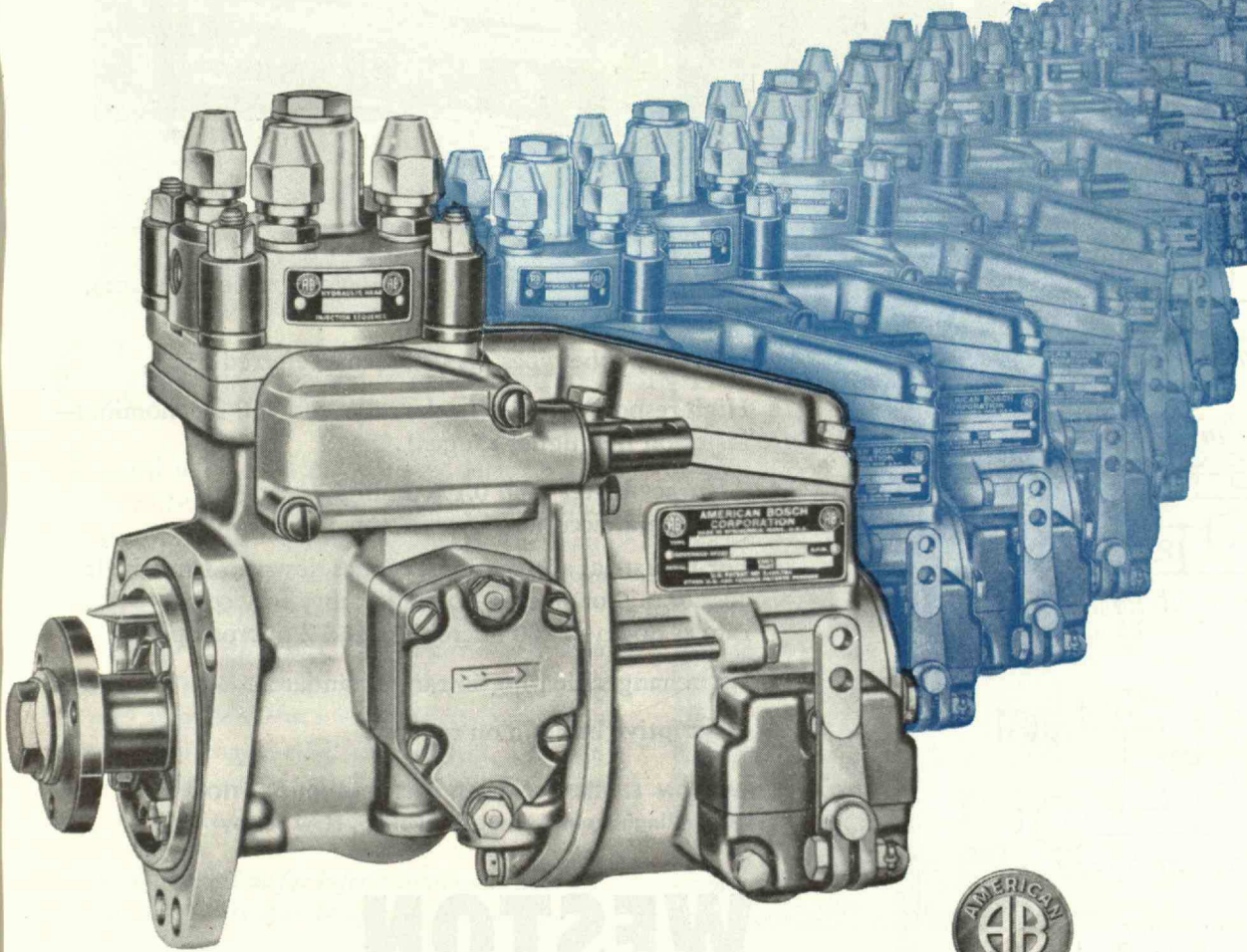
over 60,000 . . . and **STILL GROWING**

Over 60,000 American Bosch PSB single-plunger distributor-type Diesel fuel injection pumps have been produced since the pump was introduced several years ago.

Today, this simplified, lower-cost pump is being produced at a greater rate than ever before.

Here's definite proof of the acceptance of the PSB. It has literally revolutionized the concepts of fuel injection and made possible smaller, lower-cost Diesel engines . . . opening up new markets for Diesel power such as the farm tractor.

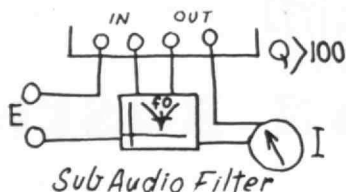
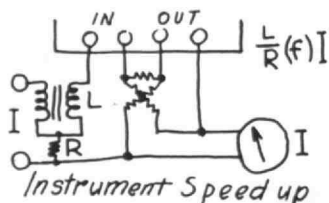
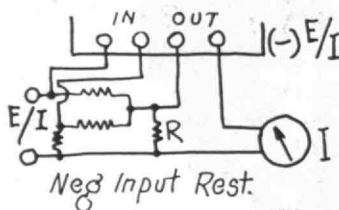
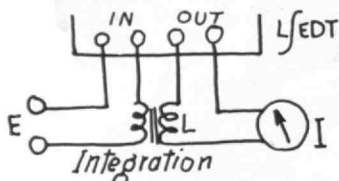
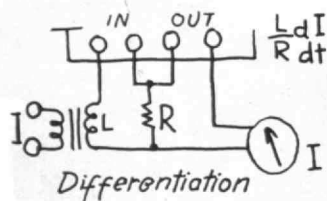
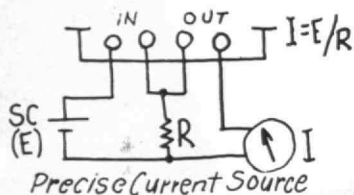
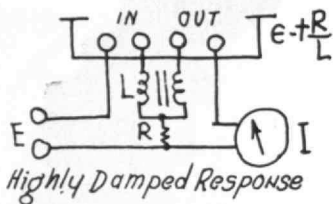
Tried and proved in the severest service, the PSB has rolled up remarkable records of performance—requires less maintenance—is easily serviced in the field. No wonder it has been hailed throughout the industry for its great contribution to Diesel progress. American Bosch Corporation, Springfield 7, Mass.



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Weston Model 1411

SPECIAL APPLICATION SCHEMATICS



D-C INSTRUMENT AMPLIFIER



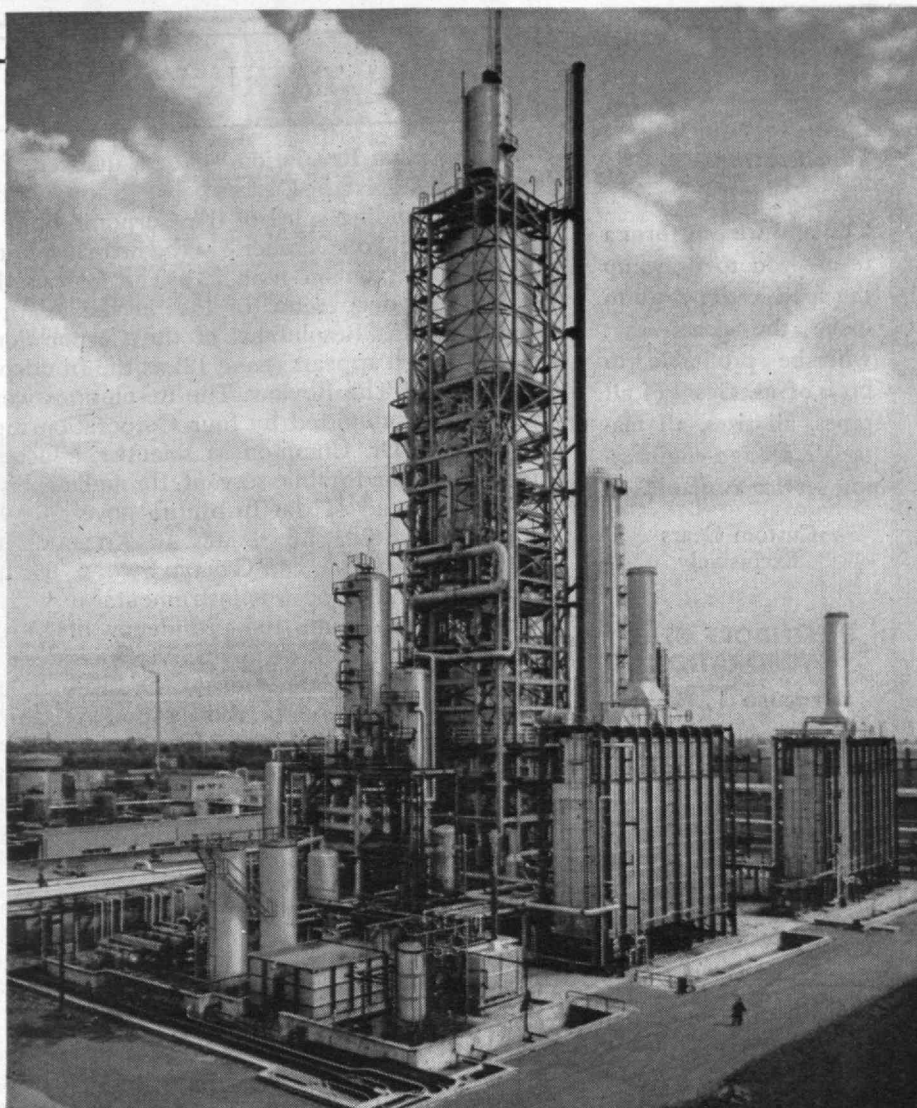
- ◆ A rugged, stable D-C Amplifier, with less drift.
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- ◆ Descriptive bulletin on request.

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Instruments



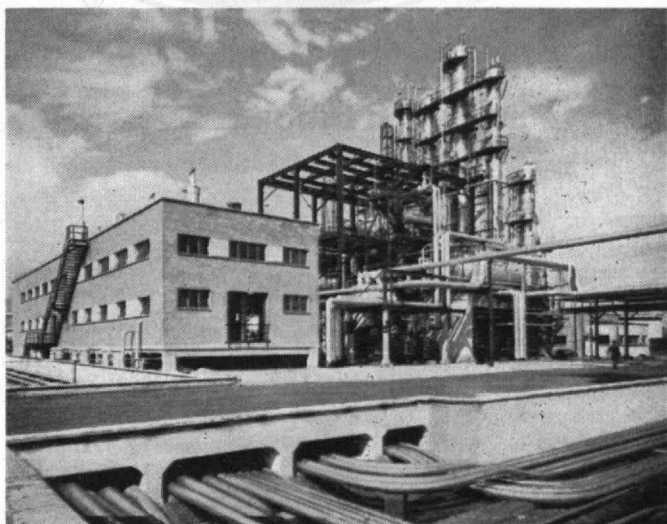
The new Condor catalytic cracking unit has a capacity of 15,000 barrels per day. The crude unit in the background has a capacity of approximately 45,000 barrels. Condor's new gas plant and compressor building are shown below.

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THE TABULAR VIEW

Corporation Resolution.—For a quarter of a century, KARL TAYLOR COMPTON was the presiding officer and guiding spirit of the Corporation of M.I.T. At its meeting on October 4—the first since the death of Dr. Compton on June 22—The Corporation expressed its deep sense of loss in the death of its chairman, in "Resolutions of the Corporation," the text of which appears (page 12) as the frontispiece of this issue of The Review. The Resolutions were prepared and submitted by four Corporation members who knew Dr. Compton as scientist, educator, administrator, and public servant, throughout his entire period as head of the Institute's governing body—VANNEVAR BUSH, '16, JAMES R. KILLIAN, JR., '26, ALFRED L. LOOMIS, and GERARD SWOPE, '95. In large measure, Dr. Swope was instrumental in getting Dr. Compton to assume the presidency of M.I.T. Dr. Bush was professor, dean, and vice-president during Dr. Compton's administration. Dr. Killian has had long and intimate association with Dr. Compton in the Institute's many administrative problems and succeeded him as president in 1949. Dr. Loomis has often worked closely with Dr. Compton, especially during World War II when M.I.T. was responsible for the Radiation Laboratory.

Desalting the Oceans.—With something like three-quarters of the earth's surface covered by water, it may come as a surprise to many that man could face the serious problem of water shortage. Home and industrial uses of water have expanded greatly in the past half century, and the world's population continues on its upward trend. Before ocean water can be made serviceable for most uses, its salt must be removed economically. A survey of present-day methods of purifying water, and an estimate of the cost involved in each case is presented (page 15) in an article by THOMAS K. SHERWOOD, '24, Professor of Chemical Engineering and, from 1946 to 1952, Dean of the School of Engineering at M.I.T. Dr. Sherwood's stimulating article was presented before the Society of Arts at the Institute last spring.

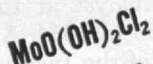
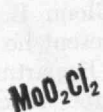
Process of Aging.—As a sequel to his article in the May, 1954, issue of The Review ("Is There a Limit to Human Life?") JAMES A. TOBEY, '15, discusses "The Process of Aging" in this issue (page 21). The topic is of interest to social scientists and administrators for the problem it creates as the average age of the nation's population continues in its upward course. But it is of interest to the individual as a means of indicating how certain baleful effects of life's inevitable onward march can be minimized or alleviated, and in developing the art of aging gracefully and graciously. Dr. Tobey has four degrees, a colonelcy, at least one book, and many magazine articles to his credit.

Russian Air Power.—In an article whose main purpose may be said to be that of cautioning against over-optimism, JACK W. RIZIKA, '47, reviews prog-
(Concluded on page 6)

MOLYBDIC OXIDE

-a versatile intermediate

Molybdic oxide, MoO_3 , is the intermediate for the synthesis of a large family of molybdenum chemicals.



These oxychlorides are volatile, soluble in water and organic solvents, and chemically reactive. MoO_2Cl_2 is obtained by the action of chlorine on the dioxide or trioxide, $\text{MoO}(\text{OH})_2\text{Cl}_2$ by hydrogen chloride on the trioxide.



The soluble alkali and ammonium molybdates are prepared by dissolving the oxide in the appropriate base. Insoluble molybdates are formed by precipitation or calcination.



The dioxide is insoluble, infusible, involatile, and rather inert chemically. It is obtained by reduction.

ORGANIC COMPLEXES

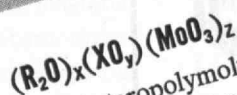
Soluble complexes are formed with many hydroxy and dibasic acids, and with polyhydric phenols.



Polymolybdates are known where n is 1, 2, 3, 4, 6, 8, 10 and 16.



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The heteropolymolybdates form an enormous family of high-molecular-weight acids and salts that can be tailor-made to your specifications. X can be almost any element in the periodic table. Most heteropolymolybdates are soluble and are readily formed in acid solution from simple molybdates or molybdic oxide.

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Write for Bulletin IA15

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THE TABULAR VIEW

(Concluded from page 4)

ress in Russian aeronautical technology from World War I to the present time. His article in this issue (page 23) clearly shows the benefits which Russian aeronautical technology derived from research work conducted in Germany during the Hitler regime, and emphasizes the need for evaluating present Soviet air strength in realistic terms. Mr. Rizika received the S.B. and S.M. degrees from M.I.T. in 1947 and 1949, respectively, and continued graduate work at Harvard University between 1949 and 1953. He was project analyst at the Glenn L. Martin Company from 1953 to 1954. At present he is working with a member of the Institute's Department of Mechanical Engineering, and with the Aircraft Gas Turbine Division of General Electric Company.

Place for Gladness.—At its quarter-century reunion at M.I.T. last June, PROFESSOR ERWIN H. SCHELL, '12, in charge of the Course in Business and Engineering Administration, made the principal address at the reunion luncheon of the Class of 1929. Professor Schell's inspiring remarks, "A Place for Gladness," appear on page 27 of this issue of The Review. Since his appointment as assistant professor in 1917, Professor Schell has been a popular and highly respected Faculty member who has maintained close contact with his former students.

Science for Man's Welfare.—In his annual message to the M.I.T. Corporation, JAMES R. KILLIAN, JR., '26, President, warned that patriotic and dramatic service of science in national defense could divert attention from its true character as a humanizing, creative, and spiritual force. A wider recognition and understanding of the beneficent nature of science and of creative intelligence is called for, says President Killian, whose report is summarized on page 29 of this issue.



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What General Electric people are doing . . .

QUIET TUBE

The U.S. Navy Bureau of Ships is interested in anything which would extend the range of its early-warning radar stations. Since a target is identified by distinguishing a pip on a radar screen from smaller, noise-generated irregularities, any reduction in noise would make the pip more discernible.

Our Research Laboratory has been working under Navy sponsorship for the past few years to design a strong, low-noise tube for microwave applications. Such a tube has now been developed, in collaboration with our Tube Department. In this tube noise is reduced by keeping the electrodes extremely close together, thus reducing the transit time the electrons require to travel from cathode to grid. The shorter the transit time, the smaller the noise factor.

The new tube, designated GL-6299, is not a single-frequency device, although it was designed for use at microwave frequencies. In fact, it exhibits improved performance throughout the radio and audio-frequency ranges. For usefulness over a large frequency range, it has been made adaptable for use in circuits of the cavity, parallel-line, or lumped-constant type. Despite its small size, it operates at currents and voltages comparable to those of conventional receiving tubes. It is being marketed by our Tube Department in Schenectady.

MAGNETIC SIGNATURES

Determining the magnetic characteristics of a metal can be a long and tedious business. The usual method requires long calculation, using data gathered from sensitive ballistic galvanometers. But that's been changed.

Our General Engineering Laboratory in Schenectady has developed a device called a D-c Recording Hysteresigraph, which eliminates the hours of laborious measurement and calculation. It traces the magnetic

"signature" of a metal directly onto a scaled chart in a matter of minutes. It is able to do this with the use of two fluxmeters, which integrate the flux voltage continuously.

The new instrument is expected to be a valuable quality-control device for manufacturers of special steel. Laboratories can also make use of it in obtaining accurate data on commercially-available materials and in the development of new alloys.

LIFE PREDICTER

The conventional way of finding out how long a fluorescent lamp will burn before it fails is to let it burn until it fails. But now the engineers of our Lamp Division at Nela Park, Cleveland, can make a pretty good prediction beforehand.

Other things being equal, they find, the life of a fluorescent lamp is proportional to the amount of emission coating on the cathode. By weighing this emission coating, the life of the lamp can be estimated.

Our engineers at Nela Park have developed a rapid method of testing such lamps for the quantity of chemical on their cathodes without breaking open or lighting the tubes. The lamp is compared in an electronic circuit with one having an uncoated cathode. When current is applied, the coated cathode is slower to increase in temperature. The difference is roughly proportional to the weight of the emission coating, and it can be read on a meter.

RADIOACTIVE SILICONES

Our Silicone Products Department in Waterford, New York, recently made joint announcement with Abbott Laboratories of North Chicago, Illinois, of an Abbott Laboratories project making radioactive silicones available for medicine and industry. Such silicones may prove to be a valuable research tool in certain areas. Radioactive silicone fluids, for

example, are made readily measurable in minute amounts by the incorporation of Carbon-14, and they are expected to offer a clearer insight into the behavior of silicones in the human body than could previously be obtained.

The new fluids have been designed for laboratory and clinical test work. They will not be a part of finished medicinals sold to the consumer. In conformity with Atomic Energy Commission practice, such initial studies must be conducted on animals only.

FILM FIXER

What camera fan hasn't spent hours in a darkroom trying to minimize the harmful effects of scratches, dust, or fingerprints on his favorite 35-mm negative? Thanks to Dr. C. Guy Suits, vice president and director of our Research Laboratory, all three of these defects can now be corrected.

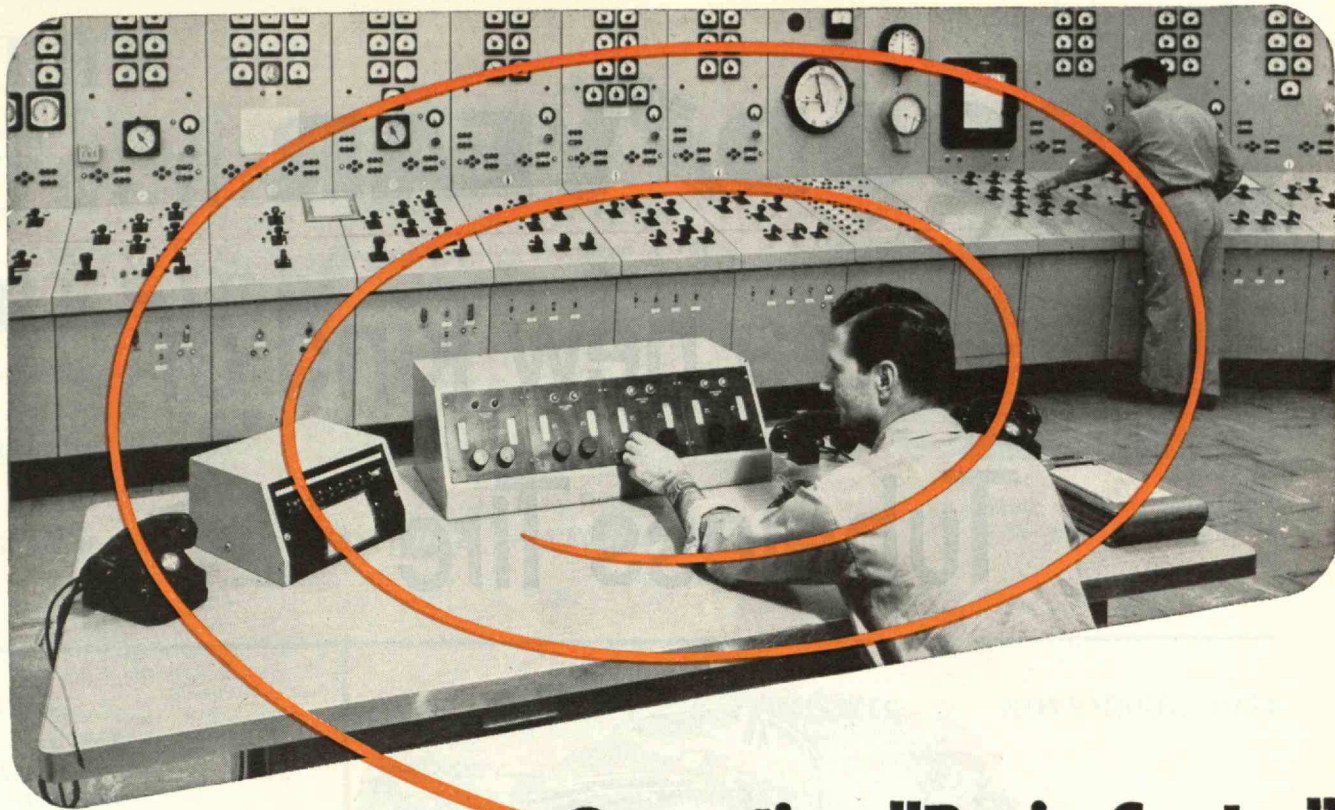
Dr. Suits, one of whose hobbies is photography, found that most of the troublesome damage from scratches occurred in the film base or in the gelatine overcoat, rather than in the silver image between. He reasoned that a liquid with the right properties might fill the "valleys" formed by scratches and eliminate the valley side surfaces that scatter light. Although glycerine has been used for this purpose, it is very viscous and forms bubbles.

He finally found the solution in a silicone oil, which has been named Refractasil. Not only did it solve the scratch problem, it also turned out to be a highly satisfactory cleaner, removing fingerprints like magic. And with a special circulating container designed by Dr. Suits, it served to remove dust particles, as well.

Equipment using the Suits technique may soon be marketed by another manufacturer. Refractasil, the silicone oil, is already in production in our Silicone Products Department at Waterford, New York.

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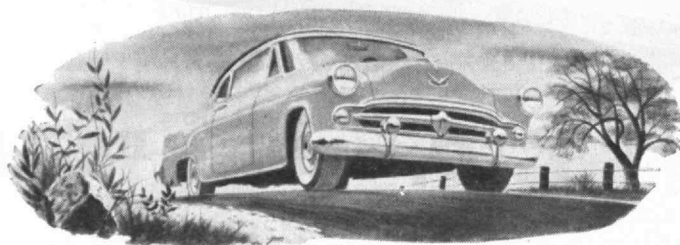
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THE TECHNOLOGY REVIEW

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EDITED AT

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY



C. E. Patch

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the Inn at Innsbruck

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PHOTOGRAPH BY WARD ALLAN HOWE THE COVER

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KARL TAYLOR COMPTON 1887-1954

President of the Massachusetts Institute of Technology, 1930-1949

Chairman of the Corporation, 1949-1954

RESOLUTIONS OF THE CORPORATION—

Possessed of rare qualities of imagination, perception and understanding, Karl Taylor Compton—as scientist, teacher, educational administrator and devoted public servant—demonstrated throughout his life the power and the good of disinterested creativeness.

In the breadth of its intellectual undertakings, in the forward thrust of its researches and in the spirit of common trust and loyalty pervading its people the Massachusetts Institute of Technology is witness of what his creative force accomplished during the nineteen years of his presidency and the five years of his wise elder statesmanship as Chairman of this Corporation. He found M.I.T. an eminent engineering school; he left it a pre-eminent institute of technology of a new and vital sort. Through his wisdom the Institute was consolidated and stabilized in its traditional endeavors, and through his foresight it was given new motivation and direction that fostered its growth and increased its scope in a crucial period. When he came to M.I.T. it had 3,209 students, 563 on the staff and a budget of \$3,739,000. When he died it had 5,183 students, 1,595 on the staff and a budget of \$46,181,172. He added a School of Science which has flourished. He encouraged and greatly extended the Institute's program of graduate study, and he engendered a humane and liberal spirit which found many embodiments including a School of Industrial Management and a School of Humanities and Social Studies. The extraordinarily successful Technology Loan Fund and many other aids to students owe their inception to him.

The young men and women who come to M.I.T. for the nurture of mind and spirit are the beneficiaries in manifold ways of his forethought and his vision. None who knew him well will doubt that in the prospering of these young minds he found his greatest reward. Let it be remembered that at nearly the last occasion when he talked with an Institute gathering, he spoke of his own first Commencement, when his father had said to him, "Karl, this is the proudest day of my life." He sought to pass on to his hearers that pride which the older man has in the achievement that the younger man has attained.

For the hallmark of Karl Compton was generosity of spirit, the will to share that which he had, of mind, of spirit, of soul; his great gifts of intellect and comprehension he offered freely and readily wherever there was need. Among his colleagues in faculty, administration and student body he was an example of justice, integrity and candid simplicity. He had a wondrous gift for calling forth the best in other people and for engendering a spirit of good will among all coming within his influence. His personality was free of any trace of guile, a personality emanating goodness and wisdom and always generous and benevolent in human relations. The generosity of spirit which characterized him found natural expression in the friendliness with which he met the world. Throughout the Institute, his associates from the highest to the humblest knew him as a friend, and it is thus that they hold him in their hearts. As our fellow member, Mr. Ferris, has said, "The beauty of his countenance and the expression of his face was clearly an outward sign of inward and spiritual grace."

The record of Karl Compton's accomplishments as scientist, teacher and public servant is large in the history of our age. The Corporation of the Massachusetts Institute of Technology engrosses that record with pride in its annals, and therein sets down with especial honor these matters that follow.

As a scientist, a follower of the baffling trail of truth, Karl Compton in the years before he was called to administer and guide for the well-being of others had made discoveries which advanced the noble discipline of physics. His published papers recording this achievement total more than a hundred, ranging from discussions of photoelectric phenomena to considerations of spectroscopy in the extreme ultraviolet. From this devotion of his to the advancement of learning in the field of physics grew his conviction of the necessity of consolidation and collaboration in the efforts of scholars in that field and, as a consequence, his achievement as principal creator of the American Institute of Physics. Beyond question, the course of development of physics was furthered and accelerated through Karl Compton's contributions. As one of his colleagues has said, "He was one of science's proudest examples of what a scientist should be and do."

But his work as a scientist was not confined to his accomplishments in research and in the focusing of creative effort. It was in no small measure as a teacher that Karl Compton gave effectively of himself to the advancement of learning. At Reed College and at Princeton University, his power to impart knowledge and, beyond that, to fire learning minds with the urge and the determination to press on with the search for comprehension, is today a proud tradition. At the Massachusetts Institute of Technology the devotion to the truth and its advancement, which in the earlier days had made him an inspiration to students directly, of necessity took its expression in the reshaping and evolving of the institution and its program as a whole. The advances in practice and in philosophy which took place at the Institute in the years following 1930 are the impressive record of the achievements of Karl Compton the statesman in education who had grown out of Karl Compton the teacher in lecture hall and laboratory.

Partly in parallel and partly in sequence with this evolving of the inspired researcher and teacher into the creative guide and administrator in university affairs was the growth of Karl Compton's share in the nation's trials and responsibilities. During the First World War he had engaged in the development of submarine detection devices and had later become an officer of the Research Information Service and an associate scientific attaché to the United States Embassy in Paris. Between wars, as Chairman of the National Science Advisory Board and in many other capacities, he was an eloquent advocate for putting science to work for the national welfare. When the threat of the Second World War loomed Dr. Compton served as a member of the War Resources Board in 1940. In June of that year he became a member of the National Defense Research Committee, later to be expanded as the Office of Scientific Research and Development. It was through this agency that Dr. Compton gave of his best to the nation during the entire struggle, so effectively that the citation accompanying his Medal of Merit declared that he personally had been responsible for shortening the duration of the war. Directly responsible, as head of the famous Division 14 of the O.S.R.D., for American radar development, Dr. Compton made his counsel and wisdom available in other fields as well, including the development of atomic weapons. Shortly before the end of the war he had gone to the Pacific to direct the Office of Field Service of the O.S.R.D., and when Japan surrendered, as one of the first civilians to reach the island, he led a survey of the status of Japanese military science. In these and many other ways he rendered a vast service to our country.

This judicial capacity of his was to be called upon again in the years after the war when in 1948 he was called to the chairmanship of the Research and Development Board of the National Military Establishment. The statesmanship which produced these wartime calls had its peacetime analogue in the many requests, to which he generously acceded, that he hold posts in government, foundations and public trusts as well as in industrial corporations. Among these should be recited the Ford Foundation, the Rockefeller Foundation, the Sloan Foundation and the Sloan-Kettering Institute.

Massachusetts Institute of Technology will go forward in accomplishment in the years ahead, expanding science and technology, stimulating the worthy ambitions of youth, serving its country in time of need. It will continue to be a body of scholars bound together in friendly relationship for creative effort. It will proceed on this path with greater assurance and devotion because of the life of Karl Taylor Compton and because his inspiration will long endure in all our hearts.

In expressing its deep sense of loss in the death of its Chairman, Karl Taylor Compton, the Corporation of the Massachusetts Institute of Technology inscribes this tribute to him and resolves that it be made a part of the permanent record and that copies be sent to his family.

Respectfully submitted,

VANNEVAR BUSH
JAMES R. KILLIAN, JR.
ALFRED L. LOOMIS
GERARD SWOPE

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The Trend of Affairs

Edna — in Three Dimensions

NEW ENGLAND is noteworthy for the variety of its weather and the rapidity with which it changes. The northeast segment of the United States is not usually regarded as being in the hurricane belt, but the tornado that struck central Massachusetts in June, 1953, and the hurricanes that visited New England in 1938 and 1944—together with Carol and Edna, striking on August 31 and September 11, respectively, of this year—leave little doubt but that occasionally New England residents can expect disastrous winds of greater than gale velocity.

Although less damaging to life and property than its predecessor of August 31, the course of Hurricane Edna was photographed by radar from many angles, and its progress was carefully plotted. As it swirled up the Atlantic seaboard, radar photographs of Edna show what is believed to be the first three-dimensional radar information about a disastrous tropical storm at the height of its fury.

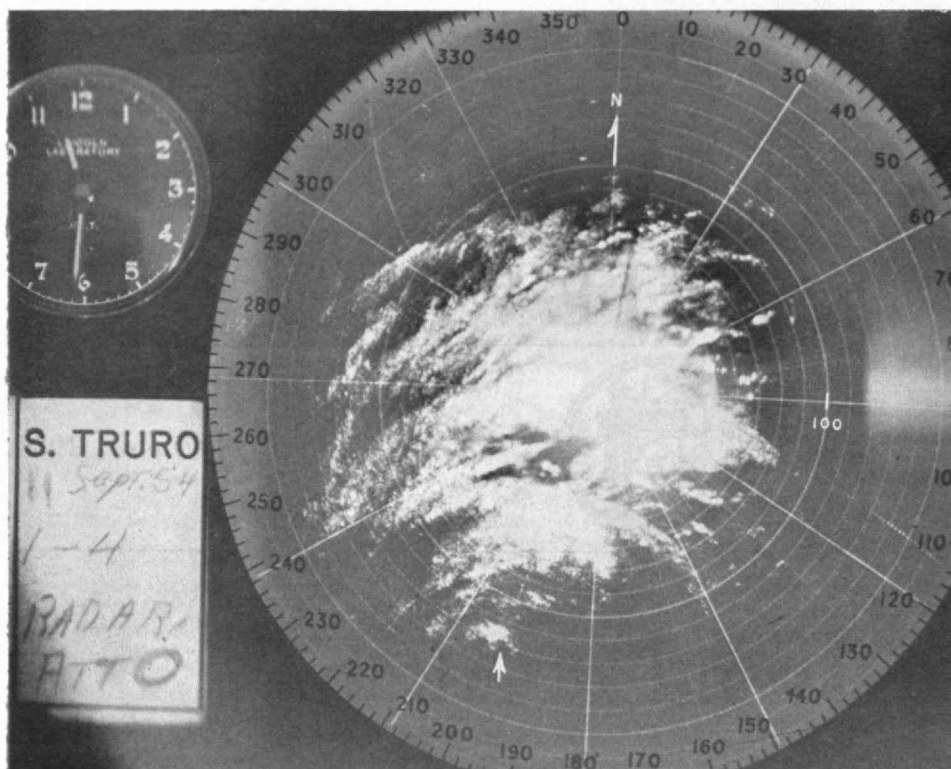
Some of these unusual photographs show the great storm while it was still about 125 miles southwest of M.I.T.'s radar station at South Truro, Cape Cod. The photographs were made by a group of M.I.T. radar engineers and meteorologists of the Air Force Research Center from Cambridge, who, for more than 30 hours of exciting and exhausting activity, plotted the weary wet miles of the hurricane's course to New England. No less than 8,000 photographs were made of Edna during the course of her tempestuous personal appearance tour from the Caribbean to the Bay of Fundy.

When it became apparent that the hurricane would strike the New England Coast, the M.I.T. Department of Meteorology, the Air Force Cambridge Research Center, the M.I.T. Lincoln Laboratory, and the Air Force Base at Hanscom Field (Bedford Airport), quickly improvised a network of

emergency weather observation and reporting stations. In addition to extra cameras for radar photography, emergency power sources and auxiliary communication systems were set up in case normal power and telephone services were disrupted. Normal local weather forecasts were augmented and nearby airfields were advised continuously of the hurricane's force and direction in order that aircraft necessarily left in the open on airfields could be protected as much as possible.

By Friday evening, September 10, a group of engineers and meteorologists, all volunteers, began their vigil at the South Truro radar site. From that time on, radar observations, temperature, barometric pressure, wind force and direction, and other information on the storm came in by radio, not only from the Truro station, but from other M.I.T. radar stations at Chatham, Nantucket, and Clinton. These reports, received at Lincoln Laboratory in Lexington, were immediately relayed to Bedford Air Base, from which the information was teletyped to weather bureaus and forecasting stations throughout the East as far inland as Ohio. The Air Force radar station at North Truro and the M.I.T. Department of Meteorology also kept the U.S. Weather Bureau and Logan Airport fully informed on their observations of the storm.

One of the first radar photographs taken on Friday at 9:05 P.M., September 10, indicated a typical high overcast condition. Two hours and 15 minutes later the outer band of rain triggered by the hurricane, was detected approaching the Cape Cod area. This band of precipitation, a heavy curtain of rain 30,000 feet high, arrived and was photographed over South Truro at 1:02 A.M. on Saturday, September 11, while the eye of the onrushing storm was still approximately 450 miles to the southwest and about 75 miles due east of Cape Hatteras. Photographs showed that this first band of precipitation was made up of a number of thunderstorm cells and was accompanied by con-



Radar "map" showing the heavy rainfall which occurred during Hurricane Edna, as photographed at the Project Lincoln radar site at South Truro on Cape Cod. At the time this photograph was made, the center of the storm, indicated by arrow head, was about 125 miles distant.

siderable lightning. This initial band was followed by successive violent rain squalls rotating around the eye of the storm in the usual counterclockwise direction. These squalls increased in frequency and in the intensity of the rainfall, and by dawn Hurricane Edna had doubled its forward speed and was lashing northeastward at 32 miles per hour.

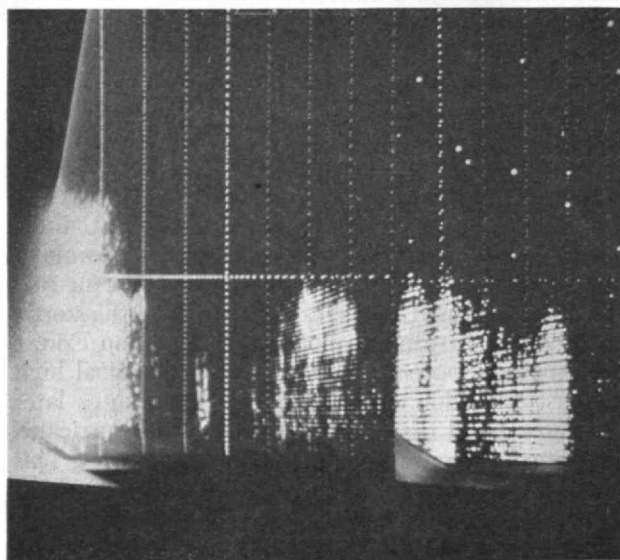
By early Saturday morning observations showed that the hurricane was wider in area than was originally anticipated, with strong winds extending 125

miles on the seaward side and 50 miles toward the coast. At 10:55 A.M. on Saturday observations indicated that the eye of the storm was 150 miles and 200 degrees southwest from South Truro on a parallel with the Naval Air Station at Lakehurst and McGuire Air Force Base in New Jersey.

As the eye of the storm approached and passed over South Truro the radar cameras saw and photographed the hurricane in three dimensions; the range, azimuth, and height of the precipitation bands. At approximately five o'clock Hurricane Edna had passed the tip of Cape Cod and the observers, unrelieved for 32 hours of continuous observation and without food except for a pot of oatmeal hastily prepared on Saturday morning, were able to rest. During this

period, at the various stations, approximately 8,000 photographs were made. This great collection of unique photographs includes invaluable information for further studies of a tropical hurricane.

The M.I.T. meteorologists are contemplating a symposium to correlate data from all sources throughout the eastern sector of the United States. The studies could result in development of techniques for determining wind velocities and predicting courses of hurricanes by use of radar, they believe.



The photograph above indicates the vertical cross section of Hurricane Edna and shows the bands of precipitation to the southwest, toward the eye of the hurricane. The technique which was used to obtain this photograph is believed to be a new one in radar meteorology.



A 32-hour vigil of radar operations, in which the Institute's Department of Meteorology took an active role, surveyed the second of the season's hurricanes to strike New England continuously, until it moved northeast over Cape Cod, and out into the Atlantic Ocean.

Fresh Water from the Sea

Serious Water Shortages Could Be Alleviated

but Conversion Costs, by Existing Methods, Are High

By THOMAS K. SHERWOOD

FOR thousands of years man's major concern was how to stay alive. With the rise of science and technology the problem of physical existence has been largely solved, so that in technologically advanced nations the problem today is not that of continuing to live, but how to live better. But technology's great contributions to the problem of physical existence have been made in an era of plentiful natural resources, and mankind is faced with the grave possibility that the development of science and technology may not keep pace with the continued depletion of the natural resources with which we have been blessed. In the year 2500 A.D., will the race again be faced by the age-old problem of existence? Fairfield Osborn's book^{8*} *Our Plundered Planet* and the panel discussions of the M.I.T. Mid-Century Convocation² typify our natural concern regarding the future availability of the things we have come to believe essential for material welfare.

Our elementary needs are air, water, food, and shelter. Even today the problem of food is serious in many lands, for the population continues to grow while the use of arable land approaches a limit. Mineral resources are being depleted at an alarming rate and sources of energy from oil and fuel are clearly limited. The United States must now import many of its essential raw materials, including nickel, zinc, copper, and even petroleum and lumber. The potentially serious shortage of water, the most abundant of all substances, emphasizes the problem of the future.

It is an oversimplification to determine that the available supplies of oil, or iron ore, or some other resource, will last x years at the present rate of consumption. For each is available in deposits of widely varying quality, and the richer and more accessible are naturally extracted first, at low cost. As depletion of reserves proceeds, the less desirable are processed at increased cost in terms of effort and investment. The development of water power illustrates the pattern. The first power sites selected are those near population centers and requiring the least investment. Less desirable sites are developed later at greater expense per kilowatt. Accessible high-grade iron ore is already approaching depletion and the poorer deposits of taconite and the more remote deposits of Labrador and Venezuela are now being exploited. Mineral deposits will perhaps never be entirely depleted (there is iron in the ocean), but the costs of extraction continue to rise and become prohibitive for one use after another.

* Please see numbered references at end of article, page 60.

This is like the depletion of firewood near a much used campsite. The first campers break up the dead wood lying near at hand. In time the area becomes so depleted of good wood that it is necessary to carry large logs a considerable distance, as at the camp sites in some of our national parks.

This pattern has in it an element of the vicious circle. The poorer the quality of the reserve, the more plant is needed for the processing. Much greater investment is needed to obtain gasoline from coal or shale than from oil, or to obtain iron from low-grade ore. The result is that more of the product is used to produce the product, until, in the limit, all of the raw materials may be needed to build the processing plants.

Most people have heard or read of the probable oil shortage, but the idea that there could be a serious water shortage may come to some as a shock. The common complaint is about the excessive rainfall at inconvenient times, and it is obvious that we use but a fraction of the rain which falls in our vicinity. Why not scoop up some of the excess as it flows past us on its way to the ocean? But complaints about too much rain in April and brown lawns in August illustrate the point. The problem is one of distribution in time and space to have the needed water at the right place at the right time.

The average rainfall in the United States is about 30 inches, providing 28,000 gallons for each person each day. This would seem to be much more than enough. But 70 per cent of this evaporates, and one third of the rest disappears underground and cannot easily be caught. This leaves 5,600 gallons per day per person which we can have if we can catch it. The total water used averages a little more than 1,100 gallons per day for each person, so our efficiency in collecting and using the water provided by rainfall is nearly 20 per cent.

This seems surprisingly high when it is remembered that the rainfall varies so widely over the country and through the four seasons of the year. The utilization is poor in some parts of the Northwest where the rainfall is 120 inches, and very high, indeed, in the southwestern states, where the average fall is less than five inches. The runoff averages somewhat higher per person in the 17 western states than for the rest of the country, but the use is much higher in the East because of the proportionately higher concentration of industry. An average utilization of 20 per cent means not only very high utilization in certain areas during parts of the year but, inevitably, frequent actual water shortages.

The water problem is already with us. In the first eight months of last year 1,031 cities and towns reported enforced curtailment of water use—over half of these instances being due to inadequate supply.⁹ The recent experience of New York City is typical, with car washing banned and restaurant patrons requested not to drink water. In almost every instance, increased demand contributed to the shortage. Between 1950 and 1975 the population is expected to increase 27 per cent, and the water demand to double.¹⁰

The situation in southern California is so serious that they not only bring water 300 miles from the Colorado River, but a plan is afoot to transport water the length of the state, from the Klamath River. Ground water is being withdrawn at the rate of 1.4 billion gallons per day in the high plains of West Texas—30 times the rate of replenishment. Ground water pumping in southern California has caused intrusion of salt water from the sea. Water-deficient areas are increasing in number and size. Near Chicago the subsoil water table has been lowered by 500 feet. City after city is limiting the use of water for the cooling of air-conditioning equipment, or requiring its return to the subsoil. Larger and more expensive reservoirs are being constructed. Three quarters of the flow of the Missouri at Kansas City last October was released from the Fort Peck Reservoir in Montana. Without this the river stage would have been but two inches above the minimum required for city water and sanitation.⁹ No appreciable increase in the country's water supply is in sight, but the need increases steadily.

There are many ways of alleviating the situation, but no simple solution to the problem. More large dams can be built to save water for dry periods. Perhaps cloud-seeding with dry ice or silver iodide can be developed to produce more rain where and when needed. Certain large supplies of brackish waters can be purified at reasonable cost. Seacoast cities, if necessary, can install a second set of water mains to carry sea water for sanitary and fire-fighting purposes. More effective re-use of water for industrial purposes, as by the greater use of cooling towers, can save large quantities of water. In this connection it is notable that one oil refinery in Texas re-uses water to the extent that its 600,000,000 gallon per day requirement involves only 40,000,000 gallons per day of new water.¹⁰ Since half of the available water is used for irrigation, there exists the possibility of more municipal and industrial water by reapportionment—at the expense of a reduction in cultivated acreage.

Many of these conservation measures can be effective and important, but the trend of the demand curve makes it clear that in the long run (say 50-200 years) they cannot be sufficient. Why then, not get the needed water from the greatest of all water resources—the sea? Sea water is 96.5 per cent pure water, and directly available to those states in which more than two thirds of the people live, and in which a somewhat larger fraction of industry is located. One cubic mile of the ocean contains enough pure water to supply the needs of the entire nation for nearly eight days. Many methods of separating pure from salt water are known, and some have been used

for centuries. Sea water contains more than 800 times as much water as magnesium, yet magnesium metal is now obtained commercially from sea water and sold at a profit. Why, then, should not all our water needs be satisfied by producing fresh water from the sea?

The answer to this question is basically simple. We can—at a price. But the significance of the price is not easy to assess. In order to do this it is necessary to compare the probable cost with the water prices we are accustomed to pay. Large users of water for irrigation pay about one-half cent per 1,000 gallons, though the price may range up to \$0.12. Industrial water prices are in the vicinity of \$0.04 to \$0.05 per 1,000 gallons, and a typical price for delivered city water is \$0.25 per 1,000 gallons. There may be communities in the Southwest which would be glad to have fresh water delivered at \$0.50 per 1,000 gallons. Very little irrigation water would now be bought for more than \$0.10 and very little city water at more than \$0.40. At the present time, therefore, water from the sea would have to be produced at less than about \$0.40 per 1,000 gallons, though this limit may be expected to increase as the demand for water grows over the years.

In attempting to assess the possibilities of cheap water from the sea, we have one exceedingly valuable guide. This is the second law of thermodynamics, from which we can deduce that the minimum amount of power required to separate 1,000 gallons of fresh water from sea water is 2.8 kilowatt-hours. This would operate a 100-watt light bulb for 28 hours. The second law is one of the most reliable laws of nature ever discovered, and it is quite certain that the figure of 2.8 kilowatt-hours per 1,000 gallons will never be bettered by any process yet to be invented.

It is important to understand the significance of this figure. It is the required work energy when operating an ideal process infinitely slowly, with no losses or inefficiencies of any kind. Every real process will require more than the minimum figure; we would be fortunate indeed if we could accomplish the water separation with the expenditure of twice the minimum, or 5.6 kilowatt-hours per 1,000 gallons. Even this is somewhat wishful thinking, since we have no process which even approaches this larger figure. At the low power rate of 0.5 cent per kilowatt-hours, the power cost alone will then be at least \$0.028.

Thermodynamics suggests nothing about plant costs, except that they may be expected to be infinite if the minimum energy requirement is to be attained. In plant processes of the types to be discussed, the fixed charges usually run about twice the energy costs. On this basis, it appears that about the best that can be hoped for is a total cost of \$0.084 per 1,000 gallons of fresh water. No existing process can approach this figure, but what cost might reasonably be attained?

In order to make an educated guess as to the possibilities of coming close to the target of \$0.08 to \$0.09 per 1,000 gallons, it is necessary to consider some of the methods which may be employed to process sea water for the purpose. Science suggests many methods, but none are very good. If methods now known

are to be used the problem is one for engineers rather than for scientists, since energy costs must be balanced against plant costs to obtain the optimum result. Engineering skill and judgment are required, and there is no clean-cut or simple answer to the question of what the minimum practical cost may be. It is possible, however, to estimate with some assurance the general cost ranges for the various processes.

Vaporization

The most familiar method of separating water from a salt solution is to boil it and condense the vapor on a cold surface (see Fig. 1). The salt does not vaporize, and the condensed steam is pure water. But the heat input amounts to 2,800 kilowatt-hours per 1,000 gallons — just one thousand times the theoretical minimum. This is certainly not very good.

But the chemical engineers have a trick. Let the steam formed condense to heat a second vessel of

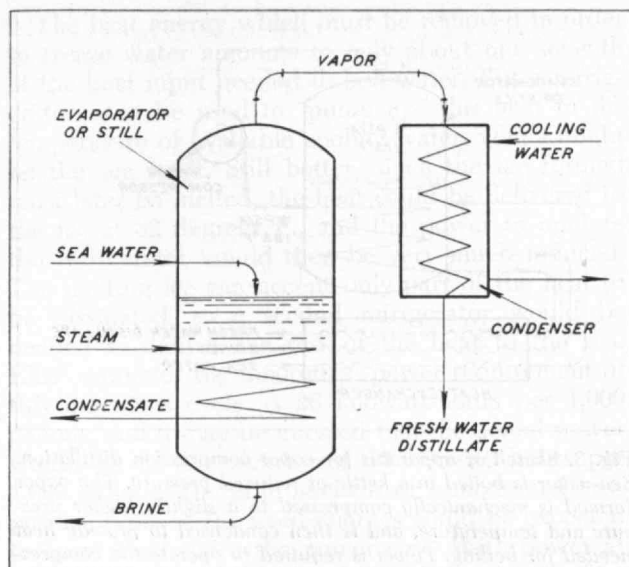


Fig. 1 Diagram for simple distillation apparatus. A portion of the sea water is vaporized in a steam-heated kettle and salt-free vapor is condensed to produce pure water distillate.

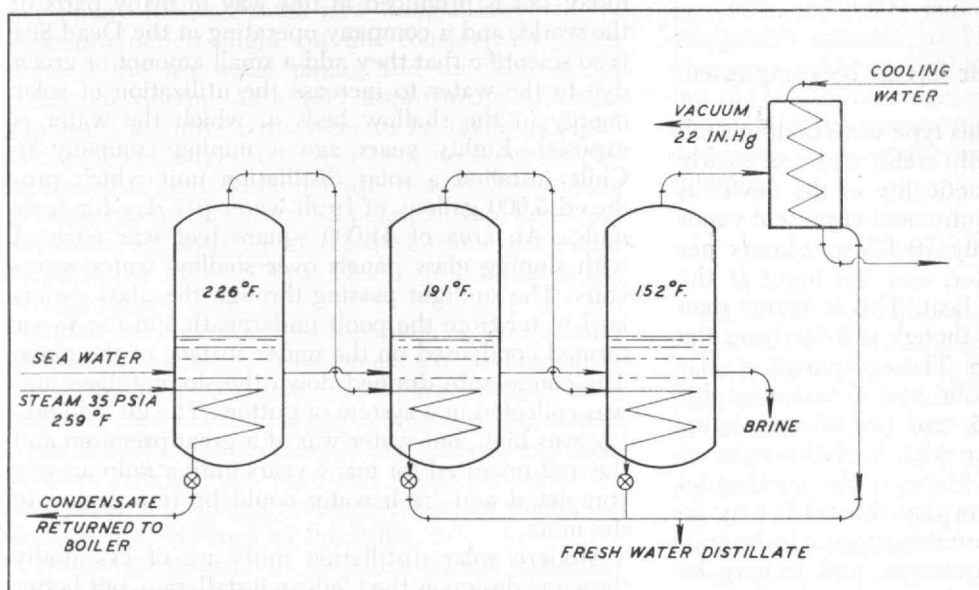


Fig. 2. Diagram for multiple-effect distillation apparatus. The first kettle is heated by steam; the second is heated by vapor from the first. A vacuum is held in the last kettle. Boiling occurs at a lower temperature in succeeding kettles, providing necessary temperature difference for heat transfer.

boiling sea water, and the steam formed in the second go to heat a third, and so on (see Fig. 2). Then in three vessels nearly three pounds of pure water would be obtained from sea water, at the expense of just one pound of steam fed. This is called "multiple-effect distillation." Vacuum equipment is required to operate so that each successive vessel is at a lower temperature, but it is not impractical to cut the required heat input for boiling by 75 per cent if four or five vessels are used in series.

The multiple-effect trick, then, can cut the heat requirement to perhaps 700 kilowatt-hours per 1,000 gallons — still a long way from the theoretical minimum of 2.8. But this input is heat energy, which is only about one quarter as valuable as work energy, in terms of which the 2.8 kilowatt-hours is expressed. On a comparable basis, then, the 2.8 figure is to be compared with one quarter of 700, or 175 kilowatt-hours. Even so, the costs of doing the job in this way are prohibitive. Using present-day costs for heating steam, cooling water, and equipment, and taking annual fixed charges as 15 per cent of plant costs, total cost of obtaining fresh water by this method is something like \$3.80 per thousand gallons.¹²

This is about 10 times too high to be of much interest, though the process is used in unusual situations. The Navy uses it on ship-board, and there are installations of this type on the islands of Bermuda, Aruba, and Curaçao, which also import fresh water by tanker. At Kuwait, in the Persian Gulf, a multiple-effect distillation unit is now being installed to meet the need of a large oil refinery for nearly 1,000,000 gallons of water per day. Our own water shortages do not yet justify the cost of water by this process.

A unique variation of the simple distillation method⁷ was used during World War II, primarily to fill the need for fresh water on submarines and for advanced shore bases in arid lands (see Fig. 3). A single, simple boiler is used, heated by its own vapor. This is made possible by slightly compressing the vapor coming off the boiling sea water, so that it will condense at a somewhat higher temperature. The compressed vapor is fed into a submerged heating coil, from which condensed fresh water is withdrawn. By employing suitable equipment to exchange heat between the feed and effluent streams, this type of still can operate without any heat input whatever. This seems like something for nothing, until it is

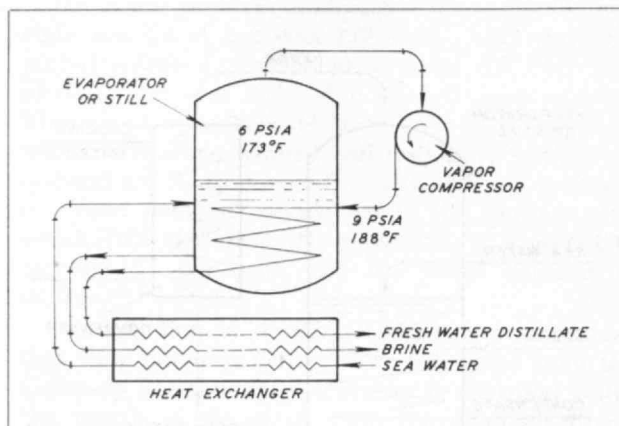


Fig. 3. Sketch of apparatus for vapor compression distillation. Sea-water is boiled in a kettle at reduced pressure. The vapor formed is mechanically compressed to a slightly higher pressure and temperature, and is then condensed to provide heat needed for boiling. Power is required to operate the compressor, but no net heat input is needed.

remembered that the vapor has to be compressed, requiring a power supply.

During the war stills of this type were built in such number as to fulfill the daily water needs of nearly 1,000,000 men, and the practicality of the device is well proven. The power requirement of present vapor compression stills is roughly 70 kilowatt-hours per 1,000 gallons of fresh water, and the input is the valuable work-energy, not heat. This is better than multiple effect distillation, though still far from the theoretical minimum of 2.8. The equipment is relatively expensive, and the total cost of water by this process, with power at 0.5 cent per kilowatt-hours and fixed charges at 15 per cent, is of the order of \$1.70 per 1,000 gallons.¹² Here in the continental United States we are not yet that thirsty! It may be noted, however, that this process appears to be subject to considerable improvement, and it may be possible to bring the cost down to somewhere in the vicinity of \$1.00 per 1,000 gallons.

When distillation is employed it is the usual practice to vaporize only part of the water and to discard a concentrated brine. Could not the evaporation be carried further so as to recover the magnesium and other valuable chemicals known to be present in the sea water? Again the answer is yes — at a price.

The present market value of the chemicals is more than \$3.00 per 1,000 gallons — more than the cost of obtaining water by vapor compression distillation. (Gold would be one of the by-products, but its value would be only one one-hundredth of a cent per 1,000 gallons.) But the process costs for the water would go up sharply if the mixed salts were to be separated, and the costs of purifying and selling the chemicals would be enormous. Common salt, bromine, magnesium chloride, magnesium hydroxide, and gypsum are now obtained commercially from sea water, but without the simultaneous separation of pure water. If both water and salts were to be separated, the job would be considerably more difficult. The average per capita water requirement corresponds to more than 50 tons of by-product salts per year, and no possible use for such quantities of these chemicals is

apparent, even if they were free. It seems unlikely that the recovery and sale of by-product chemicals will help the fresh-water cost picture except in special situations.

Solar Distillation

Since distillation is expensive in terms of energy required, solar energy would appear to be just the thing. The less rain the more sun and, therefore, the more water. Low-temperature heat is adequate for the purpose, and solar energy lands on large areas of the United States with sufficient intensity to evaporate an average of a little more than one pound of water every day for each square foot.

This process has been tested on something more than a pilot-plant scale, for it is nature's process of evaporation from the oceans to produce fresh rain water. Man has produced crude salt by solar evaporation of sea water since time immemorial. Even today salt is produced in this way in many parts of the world, and a company operating at the Dead Sea is so scientific that they add a small amount of green dye to the water to increase the utilization of solar energy in the shallow beds in which the water is exposed. Eighty years ago a mining company in Chile installed a solar distillation unit which produced 5,000 gallons of fresh water per day for their mules. An area of 51,000 square feet was covered with sloping glass panels over shallow water reservoirs. The sunlight passing through the glass vaporized water from the pools underneath and the vapor formed condensed on the under surface of the glass. The condensate drained down the sloping glass and was collected in a system of gutters. The glass breakage was high, but water was at a great premium and the unit operated for many years until a railroad was completed and fresh water could be transported to the mine.

Modern solar distillation units are of essentially the same design as the Chilean installation, but better

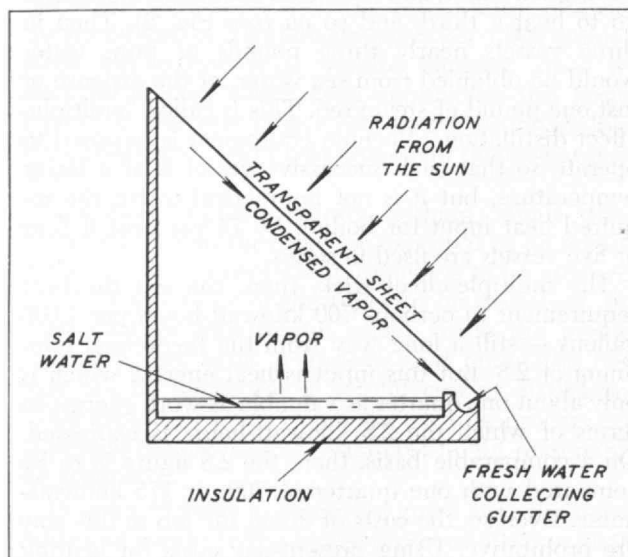


Fig. 4. Apparatus for simple solar still. Solar energy passes through the glass or plastic cover, vaporizing water from salt solution in insulated pan. The vapor condenses on under side of cover and fresh water collects in gutter.

glass and insulation are used and the efficiency of solar energy utilization is higher (see Fig. 4). A unique variation of the sloping glass-plate design was developed by Maria Telkes at M.I.T. during World War II. This was a small inflatable plastic balloon used on life rafts to produce drinking water at sea. Weighing about one pound, this device could be folded into a package of 60 cubic inches, but in use was inflated and floated on a towline attached to the raft. This ingenious still utilized about 60 per cent of the incident solar energy for the production of potable water.

Solar distillation is perhaps the simplest of all methods of producing fresh water from the sea, but like so many of the other workable methods, it is not cheap. No fuel is used, and the only power is for the distribution and collection of the water streams. But the first cost of the solar-energy collectors is high in proportion to the rate of water production. Glass-plate collectors are estimated to cost at least \$1.00 per square foot, although new designs intended for mass production might cut this considerably. Then there is the sea water piping and the fresh water collection system. As a very approximate estimate, suppose the entire costs were to be taken as equal to the fixed charges at 15 per cent per year on collectors which cost \$1.00 per square foot. Then if the average production were 1.2 pounds fresh water per day from each square foot, the fresh water cost would be \$2.85 per 1,000 gallons. This is prohibitive at the present time.

Either the collectors cost too much or the intensity of the solar radiation is too weak. To produce all of the water the country uses for all purposes other than irrigation, the needed collectors would cover an area equal to that of Massachusetts, Connecticut, and New Mexico. Put another way, the water produced by solar stills is sufficient to irrigate land of about the same area as covered by the stills.

These figures tend to put solar energy collectors in a much worse light than is warranted. The collectors themselves are remarkably cheap and their efficiency in the collection of solar energy (50-70 per cent) is high. The basic difficulty is the very low efficiency in the subsequent utilization of the energy to separate water and salt. The thermodynamic efficiency is well under 1 per cent for simple distillation. If this could be raised to 10 per cent, solar stills would be widely used.

Freezing

Another trick of nature to produce fresh water from sea water is to freeze it. Freshly formed sea ice has a great deal of concentrated salt water trapped in the cracks between the tiny ice crystals, and the melted ice is not potable. It is true that old polar ice is nearly free of salt, but we can't very well afford to store large quantities of ice a year or more while it purifies itself. German and Italian experiments have shown that ice frozen slowly from agitated sea water can be centrifuged and washed to yield ice which when melted will give satisfactory drinking water. Perhaps the discovery of some simple chemical additive may obviate the salt-inclusion problem.

The heat energy which must be removed in order to freeze water amounts to only about one seventh of the heat input needed to boil water. But a refrigerator must be used to "pump up" this heat to the temperature of available cooling water, which might be the sea itself. Still better, since the ice formed must later be melted, the heat could be delivered to the ice at 32 degrees F., and the power to operate the refrigerator would then be very much reduced. The melting ice can accept only part of the heat to be dissipated, so a second refrigerator would be needed to deliver the rest of the heat to the sea. Ellis³ estimates the theoretical power requirement of this ingenious cycle as 26 kilowatt-hours per 1,000 gallons, and it may be guessed that the actual power would be in the vicinity of 50 kilowatt-hours per 1,000 gallons. The equipment is of a moderately expensive type, so the fixed charges could be expected to be at least twice the power cost. With power at 0.5 cent per kilowatt-hours the total cost would then be \$0.75, per 1,000 gallons. This is probably low (Aultman's estimate¹ is \$1.25 or more) since there are many unknown problems in freezing and washing the ice to minimize occluded salt, but it would appear that the process might possibly be developed to become competitive with vapor-compression distillation.

Chemical Methods

All of the methods of sea water purification discussed so far require the separation of the water from the salt solution, and the trouble and expense is proportional to the amount of water removed. But the salt amounts to only one twenty-eighth the weight of the water, so it would appear more reasonable to separate out the salt rather than the water. There are many ways of doing this, most of them involving the use of chemicals.

Straight precipitation without re-use of the chemicals is easily seen to be extremely expensive. Suppose, for example, that the chemicals added cost only \$0.10 per pound, and that the amounts needed were equivalent to the weight of the salts. Then \$30 worth of chemicals would be needed to remove the 300 pounds of salt present in 1,000 gallons of sea water.

The new ion-exchange resins will remove salts from sea water and can be regenerated for re-use. One type of resin will remove the cations—the sodium, magnesium, and other metals—replacing these with hydrogen ion to form an acid effluent. This solution is then passed over a second resin to remove the anions—the chloride and sulfate ions of the original salts. The water is not only purified but new fresh water is manufactured in the process. But if the expensive resins are then to be used again they must be regenerated with purchased chemicals—acids and bases—and the result is about the same as in the case of direct precipitation. The chemicals used are relatively cheap, but must be used in large quantities. Furthermore, some of the pure water made is used to wash the resin bed, so the total cost of the fresh water is something like \$20 per 1,000 gallons—\$17 for the chemicals, plus the process costs. Direct power is used only for pumping, but

the power required to manufacture the needed chemicals is estimated at 200 kilowatt-hours per 1,000 gallons of fresh water.⁶

The use of an organic liquid solvent to extract the salt seems to offer still less promise. The salts must have a greater affinity for the solvent than for water if this scheme is to work. If this is the case, then it would seem to be even more difficult to separate the salts from the solvent than from sea water. The solvent would have to be recovered and used again if the process were to be economical.

Electrolytic Methods

Salts exist in a water solution in the form of electrically charged fragments, or ions, which can be persuaded to move out of the solution by application of an electrical potential. The ion fragments of common salt, for example, are deposited as sodium at one electrode and chlorine at the other. The sodium reacts with water to produce sodium hydroxide and hydrogen, and the chloride ion reacts with water at the other electrode to produce hydrochloric acid and either oxygen or chlorine gas. By employing suitable porous diaphragms it is possible to separate the purified water from the caustic and acid produced simultaneously. The lecture-table experiment demonstrating electrolysis is familiar to every college freshman.

Each ion separated in this way requires a definite amount of electricity, which for sea water amounts to some 500,000,000 coulombs per 1,000 gallons fresh water. The voltage required is about 1.2 volts, so the power is of the order of 170 kilowatt-hours per 1,000 gallons. Even though the by-product hydrogen and oxygen would have value, at least as fuel, the direct electrolysis process is evidently not competitive with other separation methods.

In theory, it should be possible to recover much of the power expended by allowing the hydrogen to recombine with the oxygen or chlorine in such a way as to produce electrical energy. Such a "fuel cell" has long been a dream of scientists, but has never been

made practical. Alternatively, one of the electrodes employed might be silver and the other silver chloride: the sodium deposited on the silver chloride would reform common salt, and the chlorine deposited on the silver would form silver chloride. As electrolysis proceeded the silver and silver chloride would change places. The result would be the same as selling the hydrogen and oxygen, but the saving would show up in the form of a voltage reduction from 1.2 to about 0.5 volts. This scheme, which has never been developed to the point of practical application, would involve something like 70 kilowatt-hours per 1,000 gallons,⁸ and the total cost, even with power at 0.5 cent per kilowatt-hour, could be expected to be \$1.50 or more per 1,000 gallons of good water.

Like the chemical methods of separation, electrolysis has the merit of working on the salt content instead of the larger water content of the sea water. The cost is high because the separation is too complete: the salt ions are not only moved out of the solutions but their charges are neutralized with expensive electricity. The recent development of ion exchange resin sheets permeable to only one of the two kinds of ions provides a way of avoiding the costly neutralization of the ions by using electric power only for the separation process itself.

The basis of this new process is the development of porous plastic sheets consisting of resin molecules charged either positively or negatively. These sheets contain a great deal of water, and the negatively charged sheets permit the passage of the sodium, magnesium, and other positive ion fragments of the sea-water salts, while preventing the passage of most of the negative ions. Similar positively charged sheets permit the passage of the negative ions — chloride and sulfate — and prevent the passage of metal ions. A relatively small applied voltage persuades the salt ions to pass through these sheets, along with a very little water.

One scheme is to arrange alternate membrane sheets of the two kinds of material so as to enclose

(Continued on page 54)

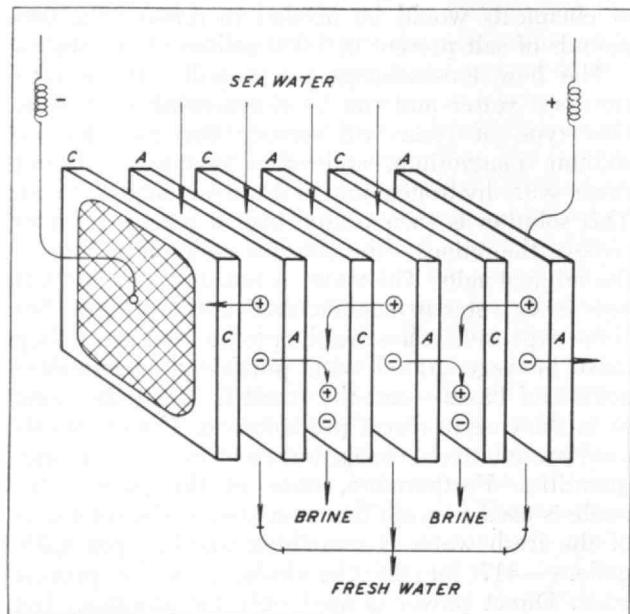


Fig. 5. (Left) Ion-selective membranes, C, permit passage of sodium and other positive ions, while membranes, A, pass only negative ions. Brine and fresh water are collected from alternate channels.

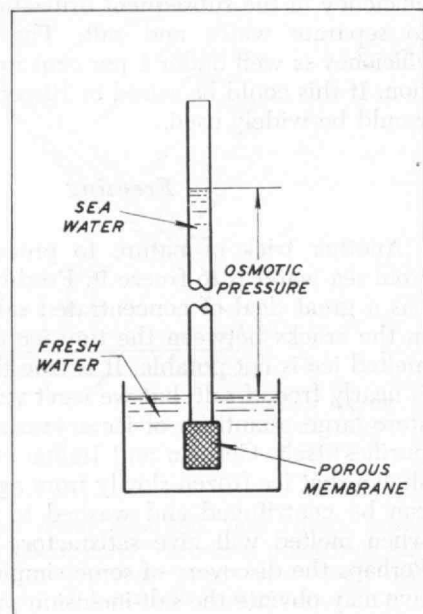


Fig. 6. (Right) Fresh water can be formed from sea water by forcing latter through a porous membrane permeable to water but not salt.

The Process of Aging

As We Become a Nation of Older People

There Is Increasing Need to Learn

How to Grow Old Gracefully

By JAMES A. TOBEY

ONE of the seemingly inevitable features of life is that strange interlude known as senescence, the process of aging which culminates, sooner or later, in death. Why do we grow old, when and how do we grow old? What, if anything, can be done to retard, reverse, or alleviate this languishing condition of life? Is it really inevitable?

Unfortunately, no one can achieve immortality by giving precise, complete, or even very satisfactory answers to all of these vital questions. Much progress has been made in recent years in the new science of gerontology, and much has been written on the subject,* but actually we know very little about the details of the process of human aging. We do know, however, that it is not a pathological process but a physiological one, like childhood, which senescence resembles superficially. We know, too, that certain endogenous and exogenous conditions may accelerate or retard the process of aging. To date, no one has discovered how to prevent it.

The process of aging in man has been said, somewhat rashly, to begin at the time of his conception. This may be true of calendar age, but it is certainly not true of physiological age. It has also been asserted that human aging commences at birth, because even then certain cells of the body, in the ovaries and kidneys for example, go through a process of involution, or degeneration. This would seem, however, to be a rather farfetched definition of aging. Finally, it has been stated that, "the period of youth is the period of most rapid decline." This would seem to be unjustified pessimism.

Considering the human organism as the entity which it is, and accepting the definition of aging as the process of progressive unfavorable changes in the human machine, aging in the practical sense in the normal individual does not begin or become manifest until about the fourth decade of life. The first 20 years or so of human existence are devoted to growth and development, after which there ensues another 20 years of maturity and the prime of life. All during these periods involution and aging of various cells may and does occur, but after the age of 40 the process is accelerated in the average person and begins to affect organs and systems as well as cells. There is, of course, a tremendous variation in indi-

vidual capacity for aging, due to heredity, the environment, and other factors.

From the age of about 50, however, the normal person invariably suffers a gradual diminution in mental and physical capacity. He may be reluctant to admit it, but he is slowing up. Among the obvious changes are the loss, or graying, of the hair; a less acute vision, particularly for dark adaption; possible impairment of hearing; loss of some or all of the teeth; reduction in the ability to perform fatiguing, muscular work; sometimes a lessened efficiency of the digestive system; an increase in blood pressure; a general decline in the basal metabolism; kidney troubles, and in men, prostate troubles; and less ability to cope with certain types of disease. By this time women have had the climacteric and have ceased to become fertile, and in men there is often diminished sexual potency.

As time marches on, as it does so inexorably, memories become less acute; the fine edge of judgment is dulled; the skin becomes sallow, wrinkled, and sagging; the bones are brittle and break easily; the gait becomes less vigorous and more shuffling; the posture is stooped and the body more or less shriveled; there is often an increase in the hardening of the arteries; the kidneys are much less efficient; bronchial troubles are more widespread; there is greater susceptibility to heat and cold; and the body is more prone to certain maladies. Finally, the individual exemplifies Shakespeare's description of Falstaff in the *Merry Wives of Windsor*, "old, cold, withered, and of intolerable entrails."

This is the common picture of the later decades of human life, but it does not apply to everyone. Occasionally we see children of 10 or 12 years of age who are prematurely old, suffering from the condition known as progeria, due to disturbances in the endocrine glands. Some persons are obviously old at 40 or 50, while others retain the characteristics of youth at 60 or even 70. Chronological age and physiological age are, in fact, two quite different matters, a proposition which has been consistently overlooked by those who set arbitrary and abrupt retirement at certain fixed ages, such as 60 or 65.

One of the most notable examples of an individual who was able to add life to his years and grow old gracefully was the late Charles W. Eliot, sometime professor of chemistry at M.I.T., who served as president of Harvard University for 40 years and as president-emeritus for another 17. More than a quarter of

* See, for example, the book of 1061 pages: *Problems of Ageing: Biological and Medical Aspects*. Edited by Albert I. Lansing, 3d edition (Baltimore: Williams and Wilkins Company, 1952).

a century ago, in 1925, I went to see him at his home in Cambridge, Mass. Arriving a little early, I awaited him in a small reception room at the head of the stairs. In a few minutes Dr. Eliot came in, bounded up the stairs like a youngster, greeted me by name, and sat down and discussed our business in a rational and highly instructive manner, and later wrote me a helpful letter about it. He was then 91 years of age, but assuredly his physiological age was many years less. He died about a year later at his summer home.

Another outstanding example of physiological youth in old age was that other eminent Yankee from Boston, Justice Oliver Wendell Holmes, who was active and useful on the bench of the Supreme Court of the United States beyond his 90th year. It will be recalled that Justice Holmes's father, the poet and physician, who died in 1894 at the age of 85, once wrote a colorful poem about "the wonderful one-hoss shay," a remarkable contraption which never wore out during long years of service, but finally disintegrated all at once. If the human body could be protected against infections, accidents, poisons, malnutrition, and other hazards throughout its normal span of life, it too might ultimately collapse merely from old age, somewhere in the vicinity of 100 years. Most scientists believe, however, that natural death due to old age never occurs. Every human death must be attributed to an accidental cause, such as heart disease, pneumonia, or some other exigency.

As a matter of fact, the human body does not wear out in a uniform manner, so that all organs degenerate at the same rate. Some cells, organs, and systems age faster and more completely than others, although again there is variation in individuals. At one time it was thought that aging of the cells was caused by their poisoning or intoxication, but this theory is not now accepted. Actually, some of the billions of different kinds of cells in the human body never age at all, while others age and die while the body lives, and still others merely age. Some cells may even survive the death of the individual by as much as 120 hours after that event, but in the end, "shall the dust return to the earth as it was."[†]

It is, of course, extremely difficult to study the aging process in living body cells, except the red blood cells, but use of radioactive tracer substances, human autopsy examinations, and experiments with laboratory animals have revealed certain changes during senescence. Among these senile changes are: a gradual retardation in the rate of cell division and a slowing up in the capacity of cell growth and tissue repair; a gradual diminution in the rate of tissue oxidation; cellular atrophy and degeneration, and increase in pigmentation and fatty infiltration of the cells; gradual decrease in elasticity of tissue and degenerative changes in connective tissue; decreased speed, strength, and endurance of skeletal neuromuscular reactions; and decreased strength of skeletal muscle.

Authorities seem agreed that the process of aging can be hastened or deferred by episodes and experiences in the earlier years of life. Repeated insults to the human machine, such as infections, severe allergies, injuries, strains, accidents, poisons, alcoholism, drug addiction, chronic malnutrition, obesity, shock,

[†] Ecclesiastes 12:7

and continuous emotional turbulence, certainly cause changes in the body cells which are conducive to senescence. An occasional infection or injury does not cause permanent harm, because the body has remarkable powers of regeneration, but frequent bouts of disease, chronic afflictions, organic maladies, and persistent mental stress all produce an unnatural wear and tear on the body which tends to accelerate the aging process. Rehabilitation during youth is, therefore, of great significance to healthful longevity.

Postponement of the aging process seems to depend in the first instance upon heredity, since some genes, derived from a long line of ancestors, seem to favor longevity and a longer prime of life. Heredity, however, is modified by the environment, both the external and the internal. Recent provocative experiments indicate that aging can be deferred by slowing down the process of growth during youth, while other investigations have demonstrated that optimum nutrition throughout life will definitely prolong life and extend the prime of life. The only trouble with these interesting tests is the fact that they have been conducted on white rats, and not upon man himself. Now, a rat is not a man and is not likely to become one, although the reverse is sometimes true, and there may be some doubt as to whether these results can be translated precisely into human terms, despite the fact that rats have much the same nutritional requirements as humans. There is no doubt, however, that good nutrition is one of a number of very important factors in human health and longevity.

About three centuries ago a celebrated English physician, Dr. Thomas Sydenham, was responsible for the adage that, "A man is as old as his arteries." It is certainly true that diseases of the arteries then caused, and now cause, much disability and are the leading cause of death in this country today, but Dr. Sydenham's maxim no longer is accepted as valid. Arteriosclerosis, or hardening of the arteries, is a lesion which can be found to some degree in nearly all persons over 20 years of age, although in most instances it is not a serious condition. In the later decades of life this malady may become more severe, resulting in hypertension and stress on the heart.

In arteriosclerosis and its precursor, atherosclerosis, there is a deposition of lipid, or fatlike, material in the lining of the inner wall of the aorta and other major arteries, which constricts the volume and thus increases the rate of flow of the blood. In the later stages of this ailment there is degeneration and necrosis (death) of the tissue of the artery, with deposition of calcium in combination with other substances. The fatty plaque which initiates or accompanies arteriosclerosis is due to large molecules of a substance known as cholesterol, which is synthesized in the body and is carried in the blood stream. Whether the high serum cholesterol which is always found in arteriosclerosis, and also in certain other diseases such as diabetes and nephrosis, is a cause or an effect has not yet been accurately determined. Some foods, such as eggs, are high in cholesterol, but the evidence does not yet justify their interdiction in the diet.

Afflictions of the heart and arteries often can be avoided, according to Dr. Paul D. White of Boston,
(Concluded on page 62)

Aeronautical Technology in the U.S.S.R.

*There Is Sufficient Reason to Assume That Any
Aeronautical Gap Which Once Existed between the
U.S.S.R. and the Western Powers Is All but Closed*

By J. W. RIZIKA

CZARIST Russia had some brilliant pioneers in aerodynamics and aircraft design. Nevertheless, her aviation industry was little developed, and most of the flying machines were either imported or manufactured at home under foreign license. In 1914, it had been commonly believed that Russia was second only to France in military air power. However, the first few months of World War I demonstrated that there were relatively few aircraft fit for active service and that the Russian air power lagged pitifully behind that of the Germans.

The lack of production of Russian-designed airplanes, the insufficiency of manufacturing facilities, and the strain on the few existing Russian roads and rails in feeding and supplying the nation's armies made the supply of both additional aircraft and replacement parts increasingly difficult, and caused a deterioration of the Russian air power as the years progressed. Industrial production (of aircraft) had almost ceased to exist by 1919. By the end of the Bolshevik Revolution, Soviet Russia not only lacked production facilities but was also devoid of the majority of its technicians, mechanics, engineers, and scientists.

Lenin, influenced by A. N. Tupolev and N. E. Zhukovski,^{1*} was soon convinced of the importance of the aviation industry to the Soviet Union. In 1918, even before the internal hostilities had subsided, Tupolev and Zhukovski founded the ZAGI (Central Aerodynamics and Hydrodynamics Research Institute). At the time of its inception, the ZAGI was responsible for all Soviet aeronautical research, development, and design, construction of aircraft, and the training of future aeronautical personnel. Professor Zhukovski spent most of his time with the problems of establishing a school, the Zhukovski Air Academy, and educating technicians, mechanics, and engineers. At the same time, Tupolev was forced to divide his time between the Zhukovski Air Academy and the building of aircraft. These two men, primarily the latter, came to be recognized as the fathers of aeronautics in the Soviet Union.

In 1922, Tupolev built a small-engined monoplane primarily constructed of wood, the ANT-1; at the same time, tests were carried out on a large twin-engined triplane, designed in 1920 and known as the *Komta*. It is believed that these airplanes represented the beginning of aircraft design under the Soviets.

During the early period of Soviet aeronautical development, it was imperative that the Soviet Union

* Please see numbered addenda at end of article, page 26.

import equipment, technical knowledge, and personnel from abroad. It was at this time (1922) that Hugo Junkers, as well as many other German advisers and technical personnel, came to the Soviet Union to build the first modern aircraft plant, the Fili plant near Moscow. These German advisers had a marked effect on the early Soviet aero designs² — even today, the Junker influence can be noted in many of Tupolev's high-speed bomber craft.

By 1926, the responsibilities of the ZAGI had been decreased in extent and expanded in intensiveness. Though it no longer was responsible for the construction of aircraft, the ZAGI had become the central department for all the Soviet aeronautical research and development and, by 1926, it had become one of the largest technical aircraft establishments in the world. At this time, its equipment included three wind tunnels, one compressed air tunnel, a water tank 560 meters (about 1,800 feet or one third of a mile) long, three propeller test stands, two engine test cells, and various other accessory equipment.

By the end of the first Five-Year Plan (1932), the ZAGI shared its technical responsibilities with two other organizations: The ZAIM (Motor Research Institute), founded in 1930, was in charge of all aero-engine development work; and the VIAM (Materials Research Institute), founded in 1932, conducted and directed all the research and development work concerning materials and their properties.

It should be pointed out that the initial Soviet developments were concerned with strategic, as well as

This is the much discussed MiG-15 for which the U. S. Government paid \$100,000 in the fall of 1953. The instruments are said to be copies of U. S., British, and German equipment, and the gun sight is reportedly a direct copy of one designed by the Sperry Gyroscope Company.

Don Nelson, Dayton Daily News



tactical, aircraft. The Soviets well recognized the importance of a strategic air arm. The industrial and productive limitations, however, forced the Soviet policy makers into making a choice between the two types of air forces. As a result, emphasis was placed on the tactical air units — that is, units that could be utilized as an aid to the ground forces. Similarly, in order to build an appreciable defensive air force quickly, quality had to be sacrificed for quantity. Thus, foreign prototypes played an important role in the early development and production. Almost all of the aero-engines used in the Soviet flying machines were of foreign designs; some of these were imported and many were produced under foreign license by the Soviet factories. The two outstanding Soviet aircraft designers of this period were Tupolev and K. A. Kalinin, the latter specializing in the design of commercial airplanes. Other notable early Soviet designers included O. K. Antonov, D. P. Grigorovitch, E. E. Groppius, W. O. Pisarenko, A. Poutiloff, and V. Shavrov. Yakolev was just beginning his career with the design of a two-place, sport monoplane.

Effect of the Purge Trials

The purge trials of the late 1930's had a drastically impressive effect on many of the leading Soviet aeronautical personnel. Aside from the extermination of many top military advisers, this purge left the Soviet Union with almost no leading aircraft designers. Kalinin, as well as many of his students, was executed. Because he stood up to defend the character of his students who were on trial, Tupolev was exiled from 1939 until 1942, when he later reappeared to design the Tu-2, a twin-engined attack-bomber. The absence of the established leaders of Soviet aircraft design was soon replaced by co-operative groups of younger and lesser-known men. Committees were formed to design many of the airplanes during this period; one of the outstanding committees was composed of Lavochkin,³ Gorbunov, and Gudkov, which operated together from 1938 to 1943 and was responsible for the design of the LaGG⁴ series of aircraft. Similarly, Mikoyan⁵ and Gurevich⁶ combined, and, in 1940, their first product, the MiG-1 (called the Russian Spitfire) appeared. Several modifications of this airplane were later built and, by the end of World War II, this team had designed a relatively large portion of the Soviet fighter airplanes.

The period following the purge trials also provided the opportunity for many of the younger designers to demonstrate their individual abilities. Ilyushin⁷ gained prominence in the rapid design of the Il-2. This machine, a two-seated assault bomber, was a model in simplicity and, at the same time, was extremely heavily armored; it represented the Soviet response to the German panzer divisions during the early part of the war. Yakolev's⁸ earlier successes with sport airplanes brought him quick recognition after the purge trials and, from 1940 to 1943, he designed eight airplanes — fighters, attack-bombers, transports, and trainers. During the war, German bombardments caused the destruction of Lavochkin's plant and the LaGG team soon broke up. Lavochkin then took the nucleus of his staff beyond the Urals; it

was not long before he had designed, and his plant was producing from native materials, the La-5, a low-winged, single-seated fighter.

Exterior Aid during the War Years

During the war years, from 1941 to 1945, the Soviets received numerous forms of aid from the other allied nations. Technical and tactical aid from American and British advisory committees helped the Soviets to modernize their air forces. It took the Soviets just a little more than a year to copy and produce the first B-29 Superfort, after some B-29's had to make a forced landing in Siberia.⁹ Innumerable Soviet technicians, production experts, and administrative groups came to the United States to examine and study the technical and productive techniques in this country.

It cannot be denied that, technically, great advancements were made by the Soviets over the war years. However, though the advancements were great, the Soviet Union finished the war about five years behind the Americans, British, and Germans; the Soviets had not developed radar, radio-controlled flying bombs, nor jet-propelled airplanes.

Postwar German Acquisitions

Even before the war had ended, the Soviets had begun to take advantage of captured German facilities and equipment. By the time the war was over, they were well on the way toward appropriating German developments, designs, and research data, as well as German technical personnel and scientists, and more than two thirds of the German aircraft production facilities.¹⁰ Actually, these plants represent only a small portion of the aeronautical acquisitions that were obtained by the Russians from the Germans. Under the exchange of information agreements, which were in existence immediately after the war, the Soviets received documented reports of all the German research and development projects from the Western Allies; the Soviets also received verbatim reports of the interrogations of German scientists and engineers. The latter reports included most of the recommendations for further advanced developments in aircraft, rockets, and missiles.

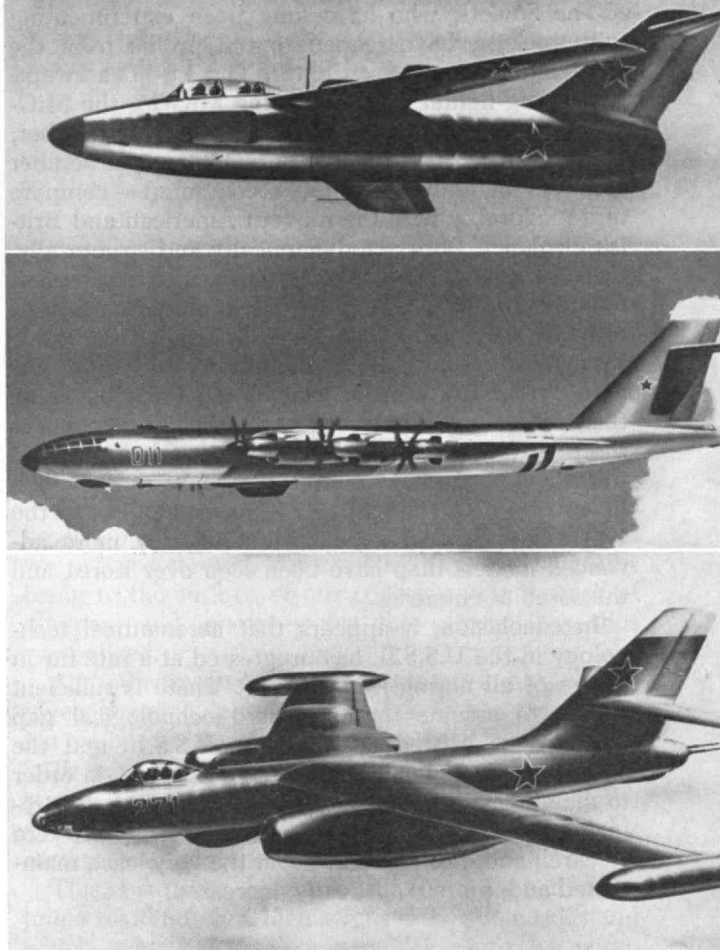
Aircraft: At the end of the war, numerous aircraft and prototypes were obtained from the Germans. By 1944, the Heinkel-162 had been developed: this airplane was a low-cost jet fighter, equipped with a BMW-003 turbojet of 1,760 pounds thrust, and was capable of speeds up to 520 miles per hour. Early in the war, Messerschmitt and Lippisch designed the Messerschmitt-163, a rocket-powered tailless interceptor; this craft was officially clocked at 665 miles per hour in 1942. The Messerschmitt-262, a twin-jet fighter, was put into quantity production at the end of 1943. With a standard engine, this craft had a speed of 540 miles per hour, and a special version, with a more powerful engine, flew over 620 miles per hour, by the end of the war. The Messerschmitt-P-1101, a swept-wing jet fighter, was in a partially completed prototype stage at the end of the war; however, the calculated maximum speed approximated 610 miles per hour at 23,000 feet altitude. Such airplanes provided the Soviets with the most advanced designs in jet and rocket-powered fighters. Similarly, such craft

as the Heinkel-111Z (a five-engined aircraft for heavy load-carrying gliders) and the Messerschmitt-264 (a four-engined, long-range bomber, capable of carrying bomb loads of 13,000 to 17,500 pounds) presented a basis for large transport and intercontinental bomber designs.

Power Plants: Before the war, most of the Soviet piston engines could be traced directly to modifications of the earlier American, British, German, and French engines. The Russians emerged from the war, however, with little hope of future aid from Great Britain and the United States. Such aid was quickly replaced with the acquisition of two German turbojet engines — the BMW-003-A2 of 1,760 pounds thrust and the Junkers Jumo-004-B4 of 1,980 pounds thrust. At the war's end, the Germans also had projects under way for two more powerful jet engines which incorporated additional improvements, such as water injection, afterburning, additional injection of fuel into the turbine, and the use of an auxiliary liquid fuel rocketjet. These projects were continued by the Soviets and, by 1950, yielded the Soviet M-018 and the M-012, with take-off static thrusts of 7,700 pounds and 6,600 pounds, respectively. Eventually, in 1947, the Soviets also obtained 30 Derwent-5 (3,500 pounds thrust) and 25 Nene (4,500 pounds thrust) jet engines from Great Britain. The latter engine, designated as the M-45, has been subject to considerable development and, by 1951, was reported to have obtained from 5,500 to 6,000 pounds thrust via water injection and afterburning.

Missiles: The guided missile projects that were obtained from the Germans by the Soviets included considerable equipment and plans for almost every missile that had been produced or was in the process of being developed. Two separate establishments were in existence at Peenemunde: one for the Air Force and one for the Army. Peenemunde West contained an airfield for testing rocket aircraft and pilotless rocket-propelled missiles. Peenemunde East was primarily concerned with component developments, such as rocket engines and control devices. From Peenemunde, the Soviets obtained all of the technical data concerning the existing development of the bifuel rockets. Similarly, both complete plans and examples of such antiaircraft rockets as the *Wasserfell*, *Rheintochter*, *Enzian*, and *Schmetterling* were obtained from Peenemunde. It is sufficient to state, perhaps, that the Soviets acquired data concerning all of the German projects from the smallest flying bomb to the Sanger Project for a satellite vehicle. What is even more important is the fact that the Soviets obtained many of the German research and development centers almost completely intact; it was only a matter of months before these centers had been reactivated to continue their work, usually with the same German personnel, under the Soviets.

Technical Man Power: When the Soviets entered Germany and took over the operation of their aeronautical research and development facilities, they enticed many of the top German technicians, engineers, and scientists to continue their work under the Russians. Some remained in Germany and others were sent to the Soviet Union, but, in general, they continued to work on the same projects that they had



American Aviation Publications

Modern Aircraft developed in the U.S.S.R. since World War II. (Top) The La-17 is a swept-back wing fighter resembling the MiG-15. (Center) The Tu-75 was one of the Soviet's early answers to long-range bombing power. (Bottom) The Il-28-2 is a swept-back wing version of the Il-28 tactical bomber.

been working on at the end of the war. When Professor Bock decided to continue his work under the Soviets, he recruited most of his Peenemunde staff to continue as well. Dr. Baade, who was the chief engineer for Junkers, similarly recruited a large portion of his staff to continue working under the Soviet regime. These are only two examples of what happened in many of the Soviet occupied German plants and research and development centers.

Present Soviet Technological Status

It is needless to point out that the Soviet acquisitions from the Germans had a profound effect in narrowing the technological and productive gaps (which existed at the end of World War II) between the United States and Great Britain, on one hand, and the Soviet Union. Throughout the war years, the allied nations concentrated primarily on the production of aircraft rather than on research, development, and new aeronautical designs. The Germans, on the other hand, placed a great emphasis on new designs, research, and development work — sometimes carrying out schemes bordering on phantasm. Perhaps it was a quirk of fate that caused most of the German work to fall into Soviet hands; nevertheless, the fact remains that such was the case. In any event, the gap in the technological accomplishments between the Soviet Union and the Western nations was greatly reduced.

The Soviets, who have long been experimenting with rockets, have reaped untold profits from the Peenemunde Research Center. The La-17, a swept-back wing fighter resembling the MiG-15; the MiG-15; the Il-28-2, a swept-back wing light jet-bomber; and the Tu-75, a six-engined intercontinental bomber — not to mention the more recent craft — compare quite favorably with the modern American and British airplanes. Both aerodynamically and structurally, these airplanes incorporate comparatively recent scientific progress. The power plant and armament of the MiG-15 appear to be equal, if not superior, to those of its American contemporary, the F-86. Its maneuverability exceeds that of the F-86; however, this is at the expense of other safety measurements to the pilot (armor plate, ejection seat, and so on). But the above-mentioned aircraft are only those which have been displayed, in one form or another, to the Western powers. There are undoubtedly more advanced models than have been seen over Korea and the satellite countries.

In conclusion, it appears that aeronautical technology in the U.S.S.R. has progressed at a rate far in excess of all normal expectations. There is sufficient reason to assume that any aero-technological gap which once existed between the U.S.S.R. and the Western powers is all but closed. Therefore, in order to maintain a reasonable balance of air power, it remains a necessity that the present emphasis on aero research and development be, at the very least, maintained and, more realistically, increased.

ADDENDA

1. At 28, Tupolev gave up a successful career in mechanical engineering to study aero and hydrodynamics at the Moscow Superior Technical School. Later, in 1910, he designed motor torpedo boats for the Czar's navy. In 1918, he and Professor Zhukovski founded the Central Aerodynamics and Hydrodynamics Research Institute which literally initiated the Soviet aircraft industry.

2. Both the German and British influences were reflected in the large emphasis on the future capacities and abilities of floatplanes; this induced a high percentage (much greater than was otherwise warranted) of sea-plane production during these early years.

3. S. A. Lavochkin was born in Smolensk in 1900 of orthodox Jewish parentage. Soon after entering high school, he entered the revolutionary army. Upon his release from the army, he entered a technical high school in Moscow, where he studied under Professor Zhukovski. Though his first 10 years were devoted to structural and production details for the better-known designers, during the purge trials he combined forces with Gorbunov and Gudkov to produce the LaGG series of aircraft. He later designed the La-5 which was largely responsible for saving Stalingrad from the oncoming German forces. After World War II, Lavochkin was chosen to extract information from, and work with, the captured German aeronautical scientists.

4. The initial LaGG series of craft were low wing, single-engined, single-seated fighters and fighter-bombers.

5. A. I. Mikoyan was born in 1899 in Soviet Armenia, the son of a country schoolmaster who was also a confirmed revolutionary. Though his early life was centered about art and music, he was trained as a draftsman. He acquired an interest in aviation while working on the design of hangars and airfields and, in his mid-twenties,

he attended the Moscow Superior Technical School where he specialized in aerodynamics. Upon his graduation, he was sent to the ZAGI plant in Kazan. Eventually, Mikoyan teamed up with Gurevich to produce the MiG-1. After the war, this team broke up and Mikoyan more recently gained prominence with the design of the MiG-15. He is presently, perhaps, the leading Soviet fighter aircraft designer.

6. M. I. Gurevich is reportedly an excellent mathematician and one of the leading aircraft structures men in the U.S.S.R. Little is known concerning his background except for his connection with Mikoyan during World War II. Since the war, this team has disbanded and both Gurevich and Mikoyan are designing their own aircraft.

7. S. V. Ilyushin was born in 1894, the son of a landless peasant. At 15, he obtained work as a laborer at a Moscow airfield. Three years later Ilyushin entered the military service where he learned to read and write; he soon became a mechanic and transferred to the Imperial Russian Air Force. After the revolution, he served as the chief mechanic for the Zhukovski Air Academy, studying in his spare time. In 1926, he obtained his engineer's degree and then worked at ZAGI under Tupolev. He was eventually transferred to the Air Force experimental factory near Moscow, as an inspecting engineer; he later became the head of this establishment. The Ilyushin aircraft designs reflect a great appreciation for simplicity; this was readily apparent in the Il-2, the most (numerically) produced Soviet aircraft during World War II.

8. A. S. Yakovlev is one of the most brilliant aircraft designers in the Soviet Union. He was born in Moscow in 1906, the son of a railroad repair shop machinist. At 14, he attempted to use compressed air power plants and he pioneered in the building of gasoline engines for model aircraft. In 1926, Yakovlev entered the Zhukovski Air Academy in Moscow where he came under the influence of A. N. Tupolev. His first original work was a primary glider, which he built at the age of 18. He continued to build many airplanes but was treated as a junior member of the aviation industry until, in 1936, one of his special designs won a reliability tour. At 34, in 1940, he was elevated to a position of chief engineer; this appointment, it seems, made him work with even greater intensity and since that time, he has produced an unbelievable number of aircraft.

9. Near the end of the war, three American B-29 Superfortresses, back from a raid on Japan, made a forced landing in Siberia. Though the American government demanded the return of both the crews and equipment, only the crews were returned. Tupolev, at the time, was working on the design of a long-range bomber; he was forced to give up his own design and supervise the copying of the B-29, which came to be known as the Tu-4.

10. Over 68 per cent of the German aircraft producing facilities, at the end of the war, were located in the Soviet occupied territories; the Soviets obtained facilities from the Germans to produce well over 25,000 aircraft annually. Of the German airframe producing plants, the present Soviet occupied territory includes 63 per cent of the total German plants that produced pursuits and fighters in 1944, 91 per cent of the total German plants that produced light and medium bombers in 1944, almost 98 per cent of the total German plants that produced heavy bombers in 1944, and about 73 per cent of the total German plants that produced other miscellaneous types of airplanes (trainers, observation craft, and so on) in 1944. These figures have been obtained from the German Air Ministry and are further broken down in the U.S. Strategic Bombing Survey Report.

A Place for Gladness

An Address Delivered to the Class of 1929

at Its Twenty-Fifth Year Reunion

By ERWIN H. SCHELL

MANY years ago, when my daughter was a small child, she hit upon the idea of issuing a weekly neighborhood newspaper. Among other requirements, it developed that I was to supply each issue with what was hoped to be a funny story.

This, I recall, proved a difficult task. Of my many attempts, I remember only one. It had to do with a little girl whose Teddy bear became rather the worse for affectionate wear and tear. In fact, one bright button eye became so wobbly in its cloth socket that serious surgical necessities were indicated. When her mother expressed sympathy, the little girl responded:

"Oh, it's all right. I'm going to name him Gladly."

"A strange name, indeed," said the mother; but daughter demurred: "Not at all. We sing about him every Sunday in Sunday School. Don't you remember the hymn that tells about *Gladly the cross-eyed bear*?"

My interest at the moment is certainly not in bears, whether cross- or wall-eyed. Nor am I directly concerned with gladness as an abstract virtue; for I think we all agree on this point. But I am interested and anxious that we find a place in our daily rounds for a kind of inner elation that feeds us no less than bread or even bread and wine.

Why do we come back to reunions? There is a very old saying which for generations has been used when we shake hands with one another. We say, "Glad to meet you." We return to reunions because we look forward to being with old friends, to seeing again those faces that were a part of our daily world in earlier years, to basking in the emotional sunshine, in the fair weather, which always inheres when good fellows get together. We are truly glad to meet each other again.

Of course we should not and do not look forward to a life of eternal reunions. Like the vanilla in the ice cream, reunions, when at their best, add from time to time a flavor to our existence that nothing else may replace. Here, it seems to me, lies one of the characteristics of gladness that we may well keep in mind if we are to live our lives fully. In this extraordinary gift which we speak of as consciousness we have areas of awareness which relate to our work, to our play, to our home, to our social world, and to our religious observances, to name only a few. While we are always aware that each region of interest exists, yet we can be preoccupied with but one at a time. Nevertheless, if any of these offers us cause for elation, we may turn to it momentarily with warmth and satisfaction, irrespective of our immediate pre-

occupation and thus enjoy its brief incursion into our consciousness.

This privilege is, I think, the reason that men enjoy having pictures of their families on their desks. As we proceed through our working day, a glance may bring to the surface of our consciousness a sense of gladness and gratitude for the satisfactions thus symbolized.

An industrialist of my acquaintance has always given prizes of permanent value to his employees. He explained:

"I want that man's achievement to remain constantly before him so that no matter how hard the going, he may always recall and be inspired by his earlier accomplishment."

This, I suppose, is why many countries still maintain a royal family which reigns rather than rules and which, when at its best, provides cause for widespread elation in an otherwise dreary political world. Witness, for example, the extraordinary outpouring of gladness as Queen Elizabeth stood before the people of her Commonwealth on her recent world tour.

May I suggest some ways in which we may cultivate and increase in our lives those moments which bring a sense of elation.

Elation of Accomplishment

The first has to do with accomplishment itself. I am convinced that we do not ordinarily allow ourselves the self-earned gratifications that our accomplishments deserve. We are too inclined to brush away our success in a gesture of over-modesty, saying, "Oh well, that didn't amount to much."

The truth is that it is our successes that keep kicking us upstairs. Many are the examples of men who attained far greater eminence than they ever originally anticipated, largely because the stimulus of their successes urged them forward to ever greater efforts. I may be misunderstood when I say that we owe it to our own futures purposely to revel with uninhibited enjoyment in our achievements — not publicly, of course, but so that we may taste to the full the sweet nectar of hard-earned accomplishment.

Years ago when George Bernard Shaw was returning to England from America, he was observed on shipboard reading a book that filled him with great amusement. So curious did one passenger become that he contrived to look over Shaw's shoulder at the title of the volume. It proved to be one of the earlier writings of George Bernard Shaw!

Elation from Examples of Others

Next, I would urge the cultivation of an active pride in, and admiration of, other people, their attainments and their standards. We say to ourselves: "There is a fine person — there is an inspiring personality" and we return with fresh resource to the work at hand.

I have a friend who for many years has purposely drawn emotional sustenance from his wide acquaintance with people of solid character and accomplishment. His self-initiated correspondence, conversations and conferences with people of merit have provided him with a never-ending flow of personal inspiration and pleasure. He has literally built resources of constructive gratification into his life.

In a letter, after telling of his early acquaintance with Carnegie, Wanamaker, and Flagler, he went on to say:

"I could tell of other great personalities who have influenced me. Schweitzer, Grenfell, Gandhi, Nehru, Hoover, Coolidge, Al Smith, Billy Sunday, Charles Lindbergh. Meeting these people had an effect upon my character. Meeting them accidentally? No. These meetings were carefully planned."

Awareness of Beauty

A noted architect once addressed our class on the subject of aesthetics in industry. His final words were to this effect:

"Love beauty, wherever you may find it, whether in Nature, in man's handiwork, or in people themselves. It will add joy to your day and happiness to your life."

I have long enjoyed the taking of colored motion pictures. To my surprise I discovered that the mere carrying of a color camera increased my sensitiveness to the presence of hue and shade. I have found this increased perceptiveness to be an unanticipated resource and delight.

There is the story of the kindergarten teacher in the slum area of a large city. She had talked to her small charges about the presence of beauty in the world but the going was hard. Few could think of illustrations. So, in desperation, she asked the children to bring to school one example of something in their homes that they had seen and enjoyed. The next morning, hands were few when she called for responses. Finally, one mite spoke up:

"Teacher, I went home and looked like you said. I looked on the second floor — I saw nothing; I looked on the first floor — I saw nothing; I went down to the dark cellar. There was my baby sister playing in the dirt. There was a little hole in the bricks in the wall behind her. There was a sunbeam coming through the hole, and it shone right on my sister's red, red hair down in that dark cellar, and I tell you, teacher, it was beautiful." Beauty can lift us up.

Anticipation

All of us benefit if we have something in the nature of a happy event to look forward to. While we may find enjoyment in doing pleasant things on the spur

of the moment, there are many of us whose hearts are gladdened by the thought of that which is to come. Next week's theater tickets on the living-room table; a road map engrossed with a future peregrination, the early perusing of a spring flower catalogue — all add verve and flavor to our existence. With but normal forethought and effort we can constantly have before us some enjoyable event-to-be — the thought of which, as our working day proceeds, on its course, brings a lift.

Even when anticipation is built upon uncertainties, its power may be great. I have always enjoyed a story my father used to tell about a man from the old country who bought a tenth of a \$10,000 lottery ticket. Around the dinner table at night, the family discussed the possibilities thus offered to them. What would they buy? The head of the family quickly put a stop to such alternatives. In his own mind he had already made a decision which he thought would please his family, as well as himself.

"I will buy an automobile," said he. "And, I will soon learn to drive and we will all go every Sunday into the country. And my wife Olga will sit beside me in the front seat and little Olga and Hans will sit in the back seat . . ."

"No, father," from little Hans, "I want to sit in the front seat."

"Hans sits on the back seat."

"But, father, how can I learn to drive if I sit on the back seat?"

"There is plenty of time, Hans, for you to learn to drive."

"But, father, I want to learn to drive *now*."

"Hans Hopfalfinger—*get out of the car!*"

Satisfactions to Order

I suppose there is no medium for made-to-order elation more powerful than the hobby. Short-term accomplishments and their ensuing lift can almost be designed to measure. At times our daily work may not yield an immediate thrill of satisfaction. Then we may turn to our avocation — be it golf, stamp collecting, or the basement workshop — for those more immediate satisfactions which bring pleasure when we think of them.

I listened one evening to the proprietor of a training center for "hobby-crafters" as he told of his experiences in the development of avocational skills.

"Take copper-smithing, for example," he said. "A man comes in — wants to learn copper-smithing. We give him a rectangular wooden block with a shallow circular indenture a few inches in diameter in the center. We give him a circular piece of sheet copper that fits over the round area. We give him a peening hammer and tell him to hammer hell out of the copper. He turns to, and in half an hour he takes out his piece of copper and finds he has an ash-tray. This delights him no end.

"The next week we give him something that takes an hour's work before it is completed. And so on until he is ready to spend thirty, forty, or fifty hours on a project that results in something that really gives him a terrific psychic boost."

(Concluded on page 46)

Science for the Good of Mankind

President Killian's Report to the Corporation

Emphasizes Beneficent Uses of Science

At its annual meeting on October 4, the Corporation of M.I.T. expressed its deep sense of loss in the death of its chairman, Karl Taylor Compton, paid tribute to his long and able leadership, and voted that its resolution on Dr. Compton be made part of the permanent record of M.I.T. Prepared by a committee whose members were Vannevar Bush, '16, James R. Killian, Jr., '26, Alfred L. Loomis, and Gerard Swope, '95, the resolution on Dr. Compton appeared on the opening page of the President's Report to the Corporation.*

In opening his thought-provoking annual message to the Corporation, President Killian recalled that the most insistent and commanding intellectual problem of our time is that of survival, and defense of the free world against sustained ideological assault and possible thermonuclear attack. In calling for the continued advance of the beneficent uses of science, President Killian remarked:

One of the many requirements imposed upon the nation by this brutal fact is an inescapable demand upon scholars and educational institutions to serve the national defense and to strengthen the free world. In this marshaling of the creative resources of scholarship, science and technology occupy a position of great responsibility and difficulty: for out of science have and must come some of the major instrumentalities for the strengthening and the protection of the free world. This may well be one of the most beneficent current services of science and scholarship. . . .

After reviewing briefly the growth of private and federally supported research, the present heavy demand for scientifically trained personnel, the need to strengthen and preserve the freedom of private institutions, and the increased responsibility of institutions of higher learning, President Killian remarked:

Along with the growing recognition of the importance of science to the national welfare have appeared adverse reactions to science — reactions of fear, uneasiness and misunderstanding, especially with respect to the work and methods of the scientist. The great and frequently dramatic part that science plays in our defense has resulted in a tendency to identify science mainly with military applications and to think of its effects in terms of destruction. There has been a growing danger that the beneficent values of science would be clouded by these fears and misunderstandings, and recent events have clearly pointed up this hazard.

One of the responsibilities of M.I.T. in the light of these current conditions is to explain, to demonstrate and to symbolize the beneficent nature of science and of creative intelligence. While discharging to the level best of our ability our responsibilities for defense, we must also keep steadily before us the importance of providing a favorable

environment for pure research, for the prospering of disinterested curiosity, for the pursuit of science as a noble end in itself and for the encouragement of creative intelligence.

If American science is to continue to prosper, if it is to continue to attract to it its proper complement of creative and gifted minds, we must everywhere combat the mistaken notion that science and engineering are narrow, provincial and destructive of human values. We must demonstrate instead that science and engineering are great liberalizing, humanizing forces as well as the greatest intellectual structure achieved by our civilization, and that the spirit and outlook of science have given and continue to give strength and vigor to the character and spirit of the American people. . . .

In serving the nation's safety and economy and industrial development, men of science and technology at the same time thus serve a deep spiritual need — the need to understand nature and to use it for the welfare of man. The practical benefits of science are a by-product of this urge to understand. Indeed science finds its fulfillment not only in the great practical structures it creates but also in the insights it provides into the order, the majesty and the mystery of man and of the universe. The needs of the spirit are served when we pursue science with these ends in mind — when we prize its practical benefits while keeping steadily in view the soaring structures of thought and beauty that science has slowly been building.

In face of the current turmoil involving scientists and other scholars, it is our continuing responsibility and opportunity at M.I.T. to express with poise and composure the beneficent values of science and all other forms of creative intelligence and to combat the anti-intellectualism which deprecates these values. We have an unusually urgent responsibility now to stress the true character of science as a liberalizing, humanizing and creative force that serves man spiritually as well as intellectually and practically. . . .

Educational Trends

In discussing educational trends at M.I.T., President Killian reviewed the more important innovations and advances in the Institute's curriculum and teaching methods. More flexibility is being introduced in the educational process, and there is an increasing emphasis on fundamentals. For example, the Department of Physics is reorganizing its laboratory instruction for freshmen and sophomores; a new program in the Department of Electrical Engineering provides broadened and deepened scientific content; and establishment of a new course of study (whose content will be made up of approximately half engineering and half humanities and social science topics) is under investigation. The Institute's Center for International Studies provides new opportunities to prepare engineers for foreign service, particularly with

* The resolution on Dr. Compton is reproduced on page 12, as the frontispiece of this issue of *The Review*.

industrial firms. A clear need exists to give a larger place to psychology in our curriculum, and distinguished scholars in the field have urged creation of a Department of Psychology, when this can be adequately financed.

The present educational trend toward greater emphasis on science is perhaps best summarized in Dr. Killian's own words:

What we are witnessing at M.I.T., along with a renaissance of imaginative teaching, is a new coalition of engineering and science, of science and social science, of education and industry and of general and professional education — a coalition designed more adequately and fully to meet the increasingly complex needs of our society, an education up to date in its outlook and relevant in its content to the needs of an industrial civilization. . . .

Already the grammar and secondary schools are pressed to meet the needs for the large number of children born during or after World War II. Soon the nation's colleges and universities will be affected by the greatly increased numbers of applicants who seek admission to college. If the institutions of higher learning are to provide the same facilities per student as they do today, it is estimated that as much college plant will have to be built in the next 15 years as has been built in the United States during the past three centuries. Naturally this anticipated increase in enrollment affects policies at M.I.T., particularly since the Institute has had limited enrollment for about two decades. On this topic President Killian reported:

It is our present feeling that M.I.T. has many responsibilities to assume in helping to meet this national growth in college enrollments but that our primary responsibility is to maintain high standards and educational leadership. We will not be able to do this if we permit ourselves to grow too large. It is the consensus of our Faculty and administration at the present time that without a marked change in structure and a great increase in resources, we cannot grow appreciably larger in enrollment at the Institute and still maintain the standards, the leadership and the opportunity to pioneer and innovate which have always characterized M.I.T.

I feel it important that we accept our share of the responsibility of meeting the impending critical shortage of teachers of science in the secondary schools and of steadily refining and advancing our own educational program for the purpose of setting standards for our kind of education throughout the country.

Financially we cannot justify an increase in enrollment without increasing our permanent funds. This is particularly true if M.I.T. is to have the stability of support and the working capital required to undertake the wide range of public service it is now asked to carry. In 1940 our endowment per student was \$21,000. Because the growth of our endowment has not kept pace with inflation or with increasing enrollment, this figure has dropped to \$10,000, if we adjust for the changed value of the dollar. The immediate effects of greater tuition income as a result of increasing enrollment are, in the long run, illusory, because the enrollment increase invariably creates new capital requirements not immediately felt. . . .

Building and Campus

During the past five years, the Institute has gone through the largest building program since it moved to Cambridge in 1916. The value of the educational

plant, at cost, was \$19,500,000 in 1948; today it is more than \$34,000,000. But, said Dr. Killian, "Even though we do not enlarge the size of our student body in the years ahead, we will still need additional facilities to round out our program." Obsolescence of educational facilities in science and engineering — greater than in other disciplines — brings with it the urgent problem of keeping up to date.

But new facilities are also needed. Among those mentioned in President Killian's report are an adequate Student Union and Alumni Center, permanent houses for the continuing large number of married students, and much improved parking facilities. New facilities for nuclear science and electronics have been urgently needed for many years. In reporting progress toward meeting the need for properly housing research activities in these fields, Dr. Killian said:

For the past five years the top priority given any physical need of the Institute has been a building to bring together our teaching and research facilities in electronics and in nuclear science, which are now widely scattered and atrociously housed in temporary buildings built for wartime activities. At commencement I announced the decision of our Executive Committee to undertake a concentrated special gifts campaign to build this building, and in addition to build an unclassified nuclear reactor for educational use.

The last Executive Committee meeting over which Dr. Compton presided authorized this effort, and he advocated the program with enthusiasm and a sense of urgency. Following Dr. Compton's death Alfred P. Sloan, Jr. '95, and then others independently proposed that the nuclear science and electronics laboratory be built as a memorial to Dr. Compton.

Under the joint leadership of Mr. Sloan and of Marshall B. Dalton '15, its honorary chairman and chairman, respectively, the Development Committee of the Corporation is actively planning the campaign to provide capital and operating funds for these two facilities.

Among the many reasons leading to the decision to build an unclassified nuclear reactor is the conviction that the development of atomic energy for beneficent use is important to the spirit of America. Though we must build bombs in a world out of joint, we will move ahead into a better time only by improving the lot of mankind and addressing ourselves to more noble ends than atomic might. The use of science for defense is necessary and we cannot be strong without it. But such use of science and technology is not a natural or satisfying use and in the end can only thwart and distort their true spirit. Is it not possible that bold and imaginative acts by Americans to demonstrate the moral purpose and the nonmilitary uses of science and technology can contribute to our own reassurance and to our leadership of a world seeking peace? Our great resources of intelligence, imagination, ingenuity and risk-taking spirit are moral forces that can lead a world out of a cold war. Science, with its spirit of creativity, its search for understanding, its dependence upon freedom and good will and its world-wide currency, offers an avenue to a higher standard of living for all the world, but more importantly, to a resurgence of a spirit of reconciliation and good will among nations. In this period of cold war we are engaged not only in an atomic armaments race but in a race to apply atomic energy to peaceful and beneficial use. This is a race we must win not only for our own welfare but for our influence in the community of the free world. . . .

(Continued on page 47)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Den Hartog Heads Course II

APPPOINTMENT of Jacob P. Den Hartog as Head of the Institute's Department of Mechanical Engineering was announced during the summer by C. Richard Soderberg, '20, Dean of the School of Engineering at M.I.T. Professor Den Hartog has been in charge of the Division of Applied Mechanics of the Department he now heads, since 1945, and is regarded as one of the world's foremost authorities in the field of mechanical vibrations.

A graduate of Delft Technical School in Holland (in 1924), Professor Den Hartog received the degree of doctor of philosophy from the University of Pittsburgh in 1929. During 1930-1931 he studied hydrodynamics and aerodynamics under Professor Prandtl at the University of Göttingen in Germany.

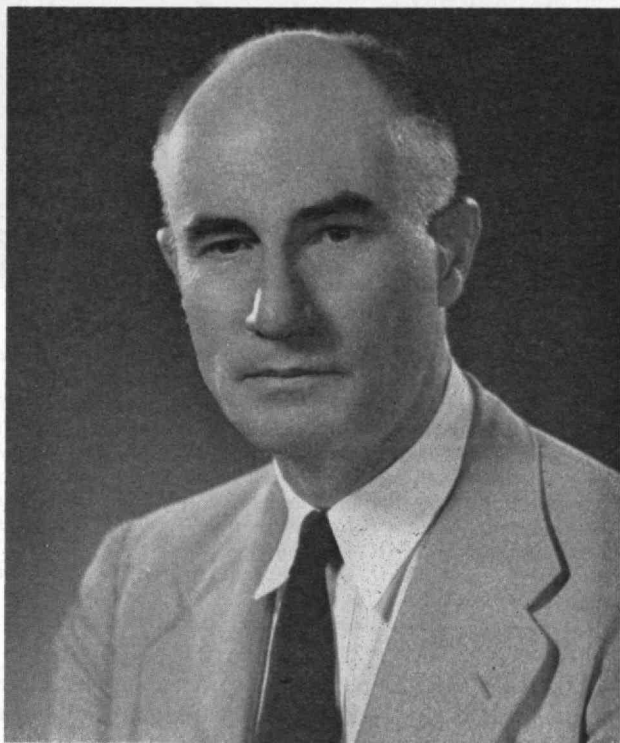
Except for the year at Göttingen, from 1925-1932 he was associated with the Research Laboratory of the Westinghouse Electric Corporation in Pittsburgh, where he served in the Mechanics Division specializing in problems in dynamics and mechanical vibrations. In 1932 he joined the engineering faculty at Harvard where he served as assistant professor of applied mechanics from 1932-1936 and as associate professor from 1936-1941. In 1942 Harvard awarded him the honorary degree of master of arts.

Born in Ambarawa, Java (Indonesia), Dr. Den Hartog became a naturalized United States citizen in 1930 and in 1939 received a commission in the United States Naval Reserve. During World War II (1941-1945) he served with the Navy on assignment with the Bureau of Ships, where he contributed to the solution of many problems of vibrations and participated in the trials of nearly all of the larger vessels. In 1945, while he was a member of the U.S. Naval Technical Mission investigating German war industry and research, he was appointed captain in the U.S. Naval Reserve.

Dr. Den Hartog has been a recipient of many professional honors, among them the Richards Memorial Award, which he received in 1947 for "outstanding work in applied mechanics," and the Worcester Reed Warner Medal, which he received in 1951 for "outstanding contributions to engineering literature."

A fellow of the Institute of the Aeronautical Sciences and of the American Academy of Arts and Sciences, Professor Den Hartog is also a member of the National Academy of Science, the American Society of Mechanical Engineers, the American Society of Naval Engineers, the American Society for Engineering Education, Sigma Xi, Tau Beta Pi, and Pi Tau Sigma.

Professor Den Hartog is the author of numerous articles in the technical press and of the highly regarded text *Mechanical Vibrations*, which is now in its third edition and which has appeared in French, German, and Russian translations.



M.I.T. Photo

Professor Jacob P. Den Hartog
Head, M.I.T. Department of Mechanical Engineering

His other books include *Mechanics*, *Strength of Materials*, and *Advanced Strength of Materials*. He is also co-editor of the *Transactions of the Fifth International Congress for Applied Mechanics*, and author of a section of Marks's *Mechanical Engineers' Handbook* (3d, 4th, and 5th editions).

Professor of Acoustics

THE appointment of Richard H. Bolt as Professor of Acoustics in the Department of Electrical Engineering was announced on September 19 by C. Richard Soderberg, '20, Dean of the School of Engineering. Dr. Bolt has been director of the interdepartmental Acoustics Laboratory at M.I.T. since 1946, and is one of the unquestioned leaders in the field of acoustics not only in the United States but also internationally.

"The acoustic requirements of modern architecture, the increasing tempo of industry, the larger size of many industrial tools, and the disturbance to civilian activity of jet aircraft breaking the sound barrier are examples which make scientists and engineers very conscious of noise and its detrimental effect on human beings," said Dean Soderberg. He added that Dr. Bolt's new appointment as Professor of Acoustics in the Department of Electrical Engineering and his continuing assignment as director of the Acoustics Laboratory suggest M.I.T.'s response to this increasing problem.



Fay Foto

Pictured above and on the facing page are 76 of the 83 members of the Class of 1904 and their wives who celebrated the 50th reunion of the Class on Cape Cod last June. Shown above on this page, in the first row, seated on the ground, in usual reading order are: Carle R. Hayward, Karl E. Peiler, Paul McC. Paine, Amasa M. Holcombe, Frank J. Severy, Bernard Blum, and E. Farnum Rockwood. Second row, seated in chairs: George Ainsworth, Arthur P. Porter, Mrs. Arthur P. Porter, Mrs. William G. H. Whitaker, Jr., Mrs. Guy P. Palmer, Mrs. Currier Lang, Mrs. Walter E. Hadley, Mrs. William S. Anthony, Mrs. Arthur H. Langley, Mrs. Karl E. Peiler, Mrs. Paul McC. Paine, Henry K. Richardson, Mrs. Amasa M. Holcombe, Mrs. Frank J. Severy, Mrs. Eugene H. Russell, Jr., Mrs. Bernard Blum, Mrs. Harry T. Rollins, and Mrs. E. Farnum Rockwood. Standing, in the third row, are: Robert B. Sosman, Robert Palmer, Mrs. Robert Palmer, Mrs. Harry H. Groves, Harry H. Groves, Guy P. Palmer, Currier Lang, Walter E. Hadley, Arthur H. Langley, Mrs. Carle R. Hayward, Eugene H. Russell, Jr., Edward F. Parker, William G. H. Whitaker, Jr., Louis H. G. Bouscaren, Arthur D. Smith, Harry T. Rollins, David Sutton, and Mrs. David Sutton.

At M.I.T., the Departments of Architecture, Electrical Engineering, and Physics participate jointly in the Acoustics Laboratory, bringing to its work the problems and experience of both theory and practice.

Dr. Bolt was graduated from the University of California in 1933, having majored in architecture.



M.I.T. Photo

Richard H. Bolt

Professor of Acoustics, Department of Electrical Engineering

Following his graduation he undertook intensive training in acoustics and physics at the same institution, received a master's degree in physics in 1937, and was University Fellow until 1939 when he was awarded the doctor of philosophy degree.

Following an interesting career as a National Research Fellow, Dr. Bolt joined the acoustics staff at M.I.T., working under the supervision of Professor Philip M. Morse of the Department of Physics. In 1943 he was sent to London, assigned to the Office of Scientific Research and Development; subsequently he became chief technical aide to the National Defense Research Committee, Division 6, New York. He joined the faculty of the Department of Physics in 1945 and became an associate professor of physics in 1946.

Dr. Bolt went to England in 1947 to survey research on underwater sound for the National Research Council as a member of the Undersea Warfare Committee's Acoustics Panel. He also attended the Marconi Congress at Rome as a delegate of the American Institute of Physics and the Acoustical Society of America. In 1949 he delivered a series of lectures on room acoustics at the Royal Institution in London and advised the London County Council on the acoustic design of the Royal Festival Hall.

Dr. Bolt is a member of the American Institute of Physics and served on its Policy Committee from 1945 to 1948. He is a fellow of the Physical Society, the American Association for the Advancement of Science, and the Acoustical Society of America of which he was president in 1948-1949. He is currently president of the International Commission on Acoustics and chairman, Armed Forces National Research Council committee on hearing and bio-acoustics.



Fay Foto

Continuing with the names of the participants who attended the 50th reunion of the Class of 1904 at the Oyster Harbors Club in Osterville on the week end of June 11, from the above illustration we list (first row, seated on the ground, reading from left to right): E. Farnum Rockwood, William B. Boggs, Clarence B. Williams, Frank H. Davis, Everett O. Hiller, and Robert M. Phinney. Second Row, seated in chairs: Mrs. Harry T. Rollins, Mrs. E. Farnum Rockwood, Mrs. William B. Boggs, Mrs. Clarence B. Williams, Mrs. Charles R. Haynes, Mrs. Frank H. Davis, Mrs. Elmer A. Holbrook, Mrs. Everett O. Hiller, Mrs. Robert M. Phinney, Mrs. Alfred L. Coupe, Mrs. Harry H. Needham, Mrs. George K. Kaiser, Henry W. Stevens, Mrs. Charles J. Emerson, and Mrs. Simon J. Martenet. In the back row, standing, are: David Sutton, Mrs. David Sutton, Mrs. Cyrus Y. Ferris, Cyrus Y. Ferris, Charles R. Haynes, Otis D. Fellows, Mrs. Henry W. Stevens, August W. Munster, Elmer A. Holbrook, George A. Curtis, Harry S. Kendall, Alfred L. Coupe, Harry H. Needham, George K. Kaiser, Frank W. Milliken, Charles J. Emerson, and Simon J. Martenet. The reunion culminated in the Alumni Day program on June 14 in Cambridge.

Science Research Laboratories to Rise as Memorial to Dr. Compton

NEW laboratories dedicated to the fundamental research which will exploit the vast peacetime potential of electronic and nuclear science will be built as M.I.T.'s memorial to the Institute's late chairman, Karl Taylor Compton. Speaking at an Institute-wide convocation in commemoration of Dr. Compton on October 4, James R. Killian, Jr., '26, President, announced plans for building the Karl Taylor Compton Laboratories for Nuclear Science and Electronics.

Preliminary drawings for a \$3,000,000 building have already been made by Skidmore, Owings and Merrill, architects of New York. In addition, Dr. Killian announced, a fund of \$3,000,000 will be provided for unrestricted support of the Institute's work in these fields.

M.I.T.'s nuclear reactor, to be devoted solely to education and nonsecret research in the peacetime applications of nuclear power — plans for which were announced at the Institute's commencement last June — will also be associated with the Karl Taylor Compton Laboratories.

The proposed laboratory building to honor Dr. Compton will comprise about 125,000 square feet of floor area, designed especially for M.I.T.'s work in nuclear science, nuclear engineering, and electronics — and related activities under the Departments of Physics, Electrical Engineering, and Chemical Engineering. "Much of the most important and significant education and research in these physical sciences since World War II," Dr. Killian said, "has been carried out at M.I.T. in grossly inadequate temporary buildings which were erected for urgent research during the war."

In these plans, Dr. Killian said, the Institute has the full and enthusiastic support of the M.I.T. Corporation's Committee on Development, headed by Alfred P. Sloan, Jr., '95, chairman of the Board of General Motors. Dr. Killian recalled that, at the last meeting of the Executive Committee over which he presided before his death, Dr. Compton enthusiastically supported the preliminary plans for a physical sciences building and a nuclear reactor devoted to peacetime objectives. "Because of his belief in the importance to education and science of these two facilities, it is singularly appropriate that they should bear his name," Dr. Killian declared. "No greater need for facilities exists at M.I.T. today than for adequate permanent laboratory space for the physical sciences."

"Dr. Karl Compton, by his imagination and efforts," Mr. Sloan has written, "developed the Massachusetts Institute of Technology into one of the leading — if not the leading — scientific institutions of our time, a real asset to our whole society. He felt strongly that to maintain the leadership of the Institute required an aggressive and imaginative program which would, while serving M.I.T.'s interests, support tremendously our scientific advancement as a whole."

The 1955 Alumni Fund will be devoted exclusively to this memorial to Dr. Compton, it was announced in October in behalf of Theodore T. Miller, '22, chairman of the Alumni Fund Board and Vice-president of the Dewey and Almy Chemical Company. "We are confident," he said, "that M.I.T. alumni everywhere will welcome this expression of their affection and high regard for one of the Institute's greatest leaders."



Herbert Stier

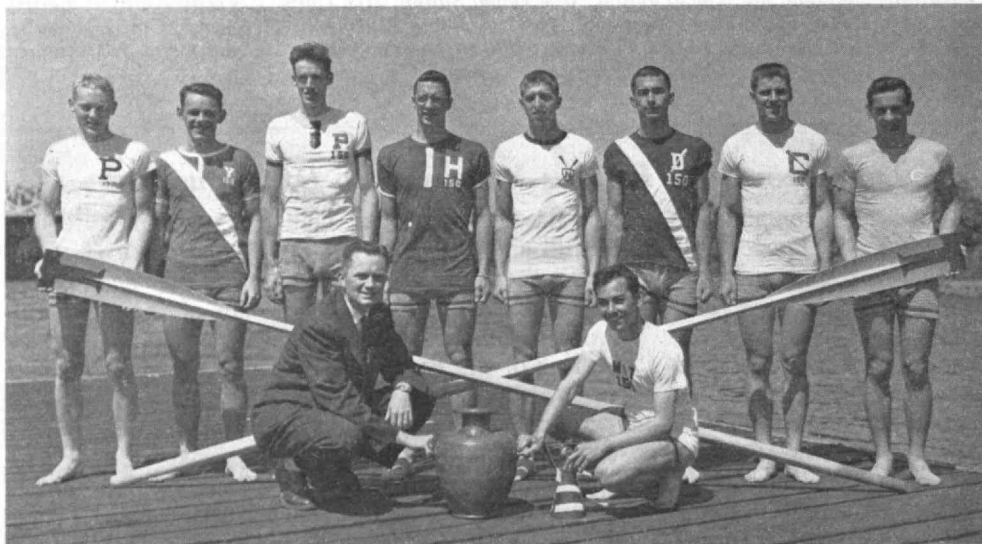
Emblematic of M.I.T.'s victory in the Henley Regatta is the Thames Challenge Cup proudly displayed by crew leaders at the Institute. Left to right are Ivan J. Geiger, Director of Athletics, James B. McMillin, '43, Coach, William H. McTigue, Jr., '54, captain, and Ward Evis, rigger. Mr. McMillin has been coaching crew at M.I.T. since 1939.

M.I.T. Wins Thames Challenge Cup

ALTHOUGH briefly reported in the July, 1954, issue of *The Review* (page 478) the success of the M.I.T. 150-pound crew in winning the Thames Challenge Cup on July 3 can now be substantiated by photographs. To win the British regatta trophy from the Royal Navy at Henley-on-Thames, the M.I.T. crew successively rowed against, and beat, able crews from University College, Reading University, London Rowing Club, Thames Rowing Club, and the Royal Navy.

The victory was a great event for members of the Institute's crew, for James R. Killian, Jr., '26, President, and for Ivan J. Geiger, Director of Athletics, who were present for the races. But perhaps the trophy, and the victory it represented, meant most to James B. McMillin, crew coach at M.I.T.

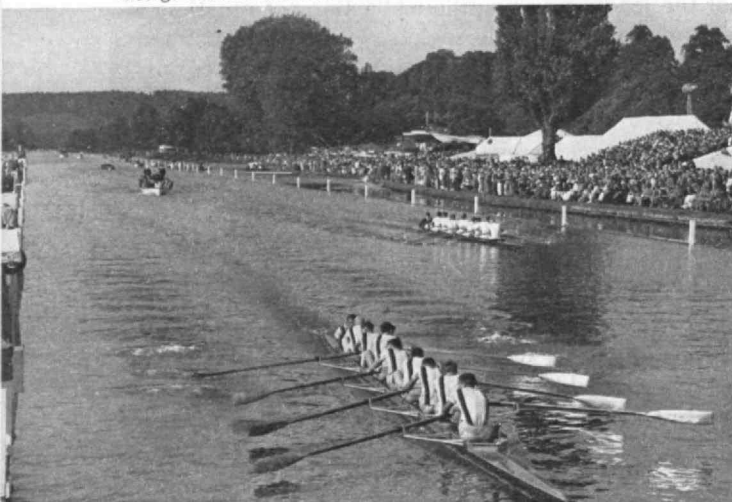
The photograph at the left shows the principals in the crew race, with the Thames Challenge Cup about to begin its air trip to the United States. Members of the victorious crew are shown below, with identification in the caption to the right of the illustration.



M.I.T. Photo

Pictured below is the M.I.T. crew pulling to victory over the British Royal Navy boat at Henley-on-Thames. Seventy-two crews were contestants for the Thames Challenge Cup which was annexed by M.I.T. in the final competition on July 3. At the finish, Coxswain Waye was tossed in the river in the traditional manner.

George Bushell and Son



"Victory shirts" won on May 15, 1954, at the 150# Intercollegiate Regatta at Princeton. The shirts, left to right, are from: Pennsylvania, Yale, Princeton, Harvard, Navy, Dartmouth, Cornell, and Columbia. The oarsmen, in the usual reading order, are: Valdemar A. Skov, '55, Robert F. Buntschuh, '55, William H. McTigue, Jr., '54, Robert N. Sawyer, '56, Gordon J. Burrer, Jr., '55, F. Lawrence Holmes, '54, Leonard V. Gallagher, '54, and Robert D. Wilkes, '55. In front, holding the Joseph Wright Trophy, are Jack H. Frailey, '44, coach, and Jerome D. Waye, '54, coxswain.

M.I.T. Has Largest Freshman Class

THE largest freshman class in the history of M.I.T. arrived at the Institute on September 16 for traditional Freshman Week End activities. Registration of more than 950 entering students inaugurated a busy four-day week end designed to acquaint the new freshmen with campus and classroom life at the Institute.

High light of the program for new students was an address of welcome by James R. Killian, Jr., '26, President of the Institute. E. Francis Bowditch, Dean of Students, and Eldon H. Reiley, '55, President of the undergraduate governing body at M.I.T., also addressed the group.

In his address to the freshmen, President Killian emphasized the spiritual, as well as the intellectual, growth which M.I.T. offers:

"While serving the nation's economy and safety, men of technology must also serve man's need for

(Continued on page 36)

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During a call on the manufacturer Revere was given the opportunity to see the overlaying operation. It was being done manually, by the gas-shielded tungsten arc method. Experience showed that the time required to complete the operation was from $6\frac{1}{2}$ to 7 hours. Included in the material cost was a full tank of argon, price about \$26.40. After the gasket surface was completed, it was machined, which sometimes revealed excessive iron pickup, caused by differences in welding speed or other operator variants. Sometimes there would be porosity, sometimes excessive hardness. Repairing these spots by re-welding meant that the surface had to be machined again.

The company in question is highly skilled, and seldom needs to call in people from outside. However, this difficult operation was of considerable concern because of the size of the contract and the extra costs involved. Revere was asked for its opinion. After studying the matter, it was suggested that the gasket surface could be done more quickly and uniformly by semi-automatic methods, using equipment already

available in the shop. The necessary strict details of procedure were developed in the Welding Section of Revere's Research and Development Laboratory at Rome, N. Y. so that we were able to prove the method. The customer's shop was then revisited and assistance given in setting up the equipment, which included a variable-speed welding positioner to rotate the tube sheet under a stationary head. On the first sheet overlaid by this gas-shielded metal arc process, the time required was 49 minutes.

Time thus was reduced by some six hours. Argon consumption was cut to about 25 cubic feet at a cost of about \$3, representing a saving of about \$23 in gas alone. Cost estimates of the two processes indicated a total saving of about \$50 per tube sheet. Since the manufacturer still had over one hundred of these heat exchangers to make before the contract was completed, total savings will amount

to about \$5,000, as a result of the better method.

It is interesting to note that no Revere materials were involved in this work. Nevertheless, Revere was glad to do it for an important customer, one who buys large quantities of our metals.

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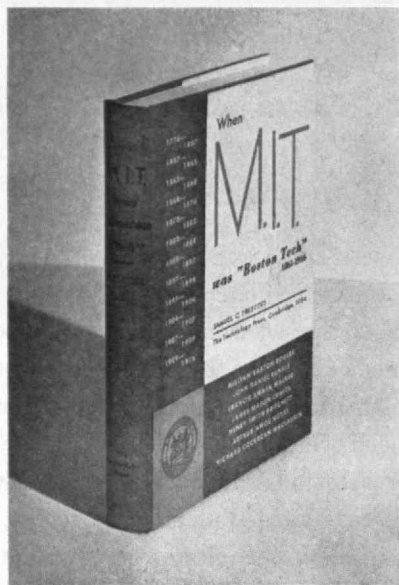
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THE INSTITUTE GAZETTE

(Continued from page 34)

understanding and for spiritual growth. Here at M.I.T. we can give a pilot-plant demonstration that men and women may live and work together with a minimum of meanness and irresponsibility and with a conscious effort to utilize reconciliation and good will to advance the lot of each other.

"We have an opportunity to exemplify day in and day out our democratic ideals of social justice, freedom, and individual dignity. We have an obligation to resent every encroachment upon these ideals and every act which erodes away this freedom and this dignity. We have an obligation to cultivate and demonstrate the moral idealism which is the cement of our society.

"At M.I.T. we also have an inescapable responsibility to deal with ideals as well as ideas and to concern ourselves with values while we become proficient with things. To achieve this combination we have been creating at M.I.T. a new coalition of ideas and ideals, of science and social science, and of general and professional education with the intent of providing an outlook and a culture relevant to the needs of modern life. This new coalition of learning emphasizes our conviction that you can be neither an effective scientist, engineer, executive, economist, nor architect without acquiring understanding of our society and of human relationships."

The four-day program included tours, conferences, and athletic and social events which are designed to acquaint the new students with campus and classroom life at M.I.T. Other high lights included a tea for women students, an acquaintance dance, and special church services and programs. The activities were concluded with a reception on Sunday afternoon, September 19, by President and Mrs. Killian.

Harry W. Gardner: 1873-1954

HARRY W. GARDNER, '94, Professor of Architectural Design, Emeritus, who served on the faculty of the Department of Architecture for 48 years before retiring in 1943, died on July 25, 1954. He was 81 years old.

Professor Gardner was born in Dover, N.H., and joined the Institute staff as instructor in architecture one year after his graduation. He was promoted to assistant professor in 1903, associate professor in 1909, and professor of architectural design in 1920. Following his retirement, he served for one year as lecturer in the Department.

Under the Austin Fellowship, Professor Gardner studied architecture in Sicily, Italy, France, and England during 1889-1900; and four years later traveled through these countries again as conductor of a departmental summer school.

A member of the American Institute of Architects and Boston Society of Architects, Professor Gardner contributed greatly to the development of the Department of Architecture at the Institute.

(Continued on page 38)



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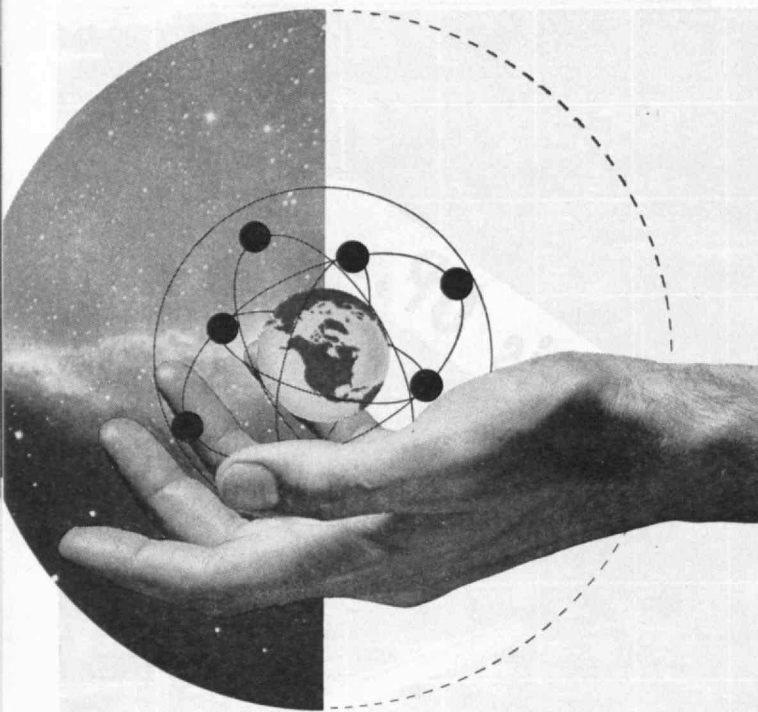
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THE INSTITUTE GAZETTE

(Continued from page 36)

Revised Electrical Curriculum

MEETING at the Institute for an all-day session on February 11, 1954, members of the Visiting Committee on the Department of Electrical Engineering* and members of the Department convened with James R. Killian, Jr., '26, President of the Institute, Julius A. Stratton, '23, Provost, and Edward L. Cochrane, '20, Dean of the School of Engineering, who represented the Administration.

The report of the Visiting Committee, which has been summarized below, was received for publication in *The Review* on June 2, 1954.

The morning was devoted to discussion with Gordon S. Brown, '31, Head of the Department of Electrical Engineering, assisted by key members of the staff who are responsible for new subjects of instruction in the revised curriculum. The new curriculum of basic subject matter in Electrical Engineering is to be offered to all students, whereas the plan of previous years had provided for options in Electric Power, Communications, and Electronic Applications.

Dr. Brown gave a brief sketch of the entire Electrical Engineering four-year curriculum as now proposed by the Departmental Committee on Educational Policy. Professor Ernst A. Guillemin, '24, Truman S. Gray, '29, Associate Professor of Engineering Electronics, Thomas F. Jones, '40, Alexander Kusko, 2-44, Samuel J. Mason, '47, David C. White, Associate Professors of Electrical Engineering, and Richard B. Adler, '43, Assistant Professor of Electrical Communications, then summarized for the Committee their objectives in each of their subjects.

The Committee found the report encouraging. Required electrical subjects in the new program will comprise both classroom and laboratory instruction, to facilitate a broad understanding of the basic fundamentals of electrical science, and the development of an awareness of the creative exploitation of these fundamentals in engineering practice. The Department places great emphasis upon the laboratory aspects of instruction, and the Committee was enthusiastic of the accomplishments in equipping and planning the circuit theory, electronic, and energy-conversion laboratories that correlate with the classroom subjects in these areas.

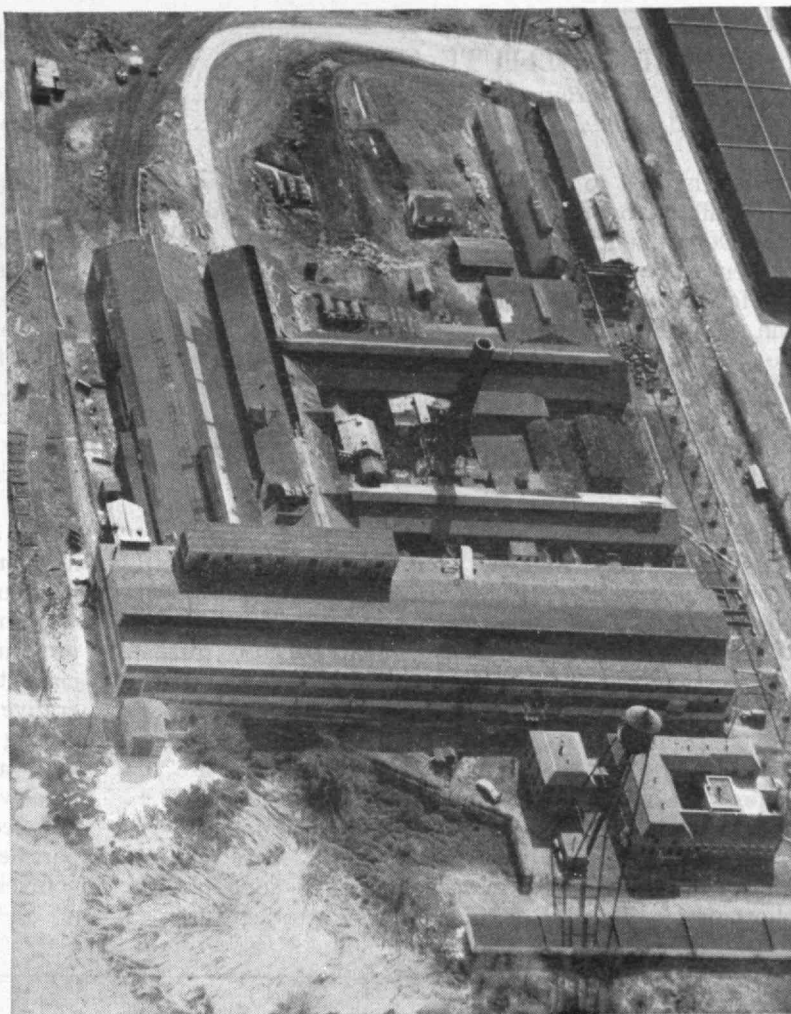
The aim in building the course of instruction is to preserve equal opportunity for every student with respect to his eventual choice of free electives in the senior year, and in his subsequent choice of professional work. The offerings of professional elective subjects are both broad and deep, and the student may draw upon the resources of the whole Institute in the choice of professional elective subjects and not

(Continued on page 40)

* Members of this Committee for 1953-1954 were: H. B. Richmond, '14, chairman, Francis J. Chesterman, '05, Thomas J. Killian, '25, Edward J. Poitras, '28, Edwin H. Armstrong (deceased), James W. McRae, Gwilym A. Price, and B. Richard Teare.

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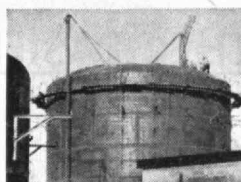
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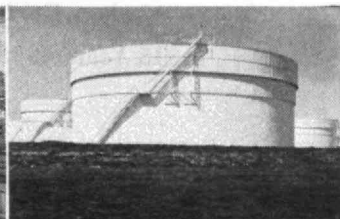
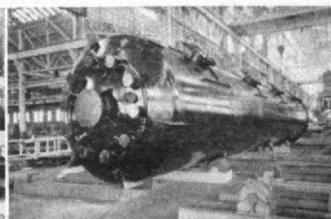
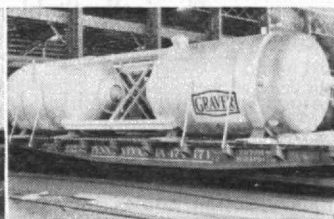
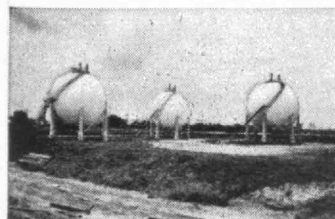


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confine himself to a choice wholly from within subjects offered by the Electrical Engineering faculty. The Department is confident that it will prepare the student to be ready for service, with excellent potential for future professional growth, in any segment of the broad field of electrical engineering, whether it be operating, manufacturing, design, or research, and without regard for the artificial boundaries established by power and frequency dimensions.

The rebuilding of the physical structure of the laboratories is progressing rapidly, with priority given to equipping the new laboratories in the circuits, electronics, and the junior-year subject on energy conversion. Reconstruction of the old machinery laboratory is under way. It has not been possible to proceed as rapidly with this phase of the effort as with the laboratories named above; first, because the present senior class [1954] needed the machinery laboratory to wind up their senior-year studies under the old program; second, because the task is difficult; and third, because major changes in plant layout are dependent upon the disposition of the Electrical Engineering Department Substation, which comprises several very large machines. Disposing of these machines on an economical basis could not be done in a short period. Related to the substation problem has

been the disposition of the network analyzer. The Executive Committee of the Corporation approved Dr. Brown's recommendation to dispose of the network analyzer because it had ceased to be a significant factor in the efforts to strengthen graduate research in the power area. The equipment was purchased from M.I.T., and is being installed in the Electrical Engineering Department at the University of Puerto Rico.

A substantial fraction of the faculty who normally would be regarded as communications specialists are enthusiastically participating in the work of establishing the new energy-conversion activities on a high technical plane. The Department also has been greatly aided by the presence of Arnold Tustin of the University of Birmingham as Visiting Webster Professor.

The accomplishment of these achievements creates new problems — one of which pertains to the graduate co-operative Course VI-A, leading to the master of science degree. Students in the regular Course VI program now defer their choice of academic specialization to the senior year. Students in the co-operative course, however, declare their specialization during the sophomore year, because they sign up with a particular company or organization for a three-year period.

A second problem is the responsibility of the Department in its instruction of students from other courses. There appears the need to review and to re-

(Continued on page 42)

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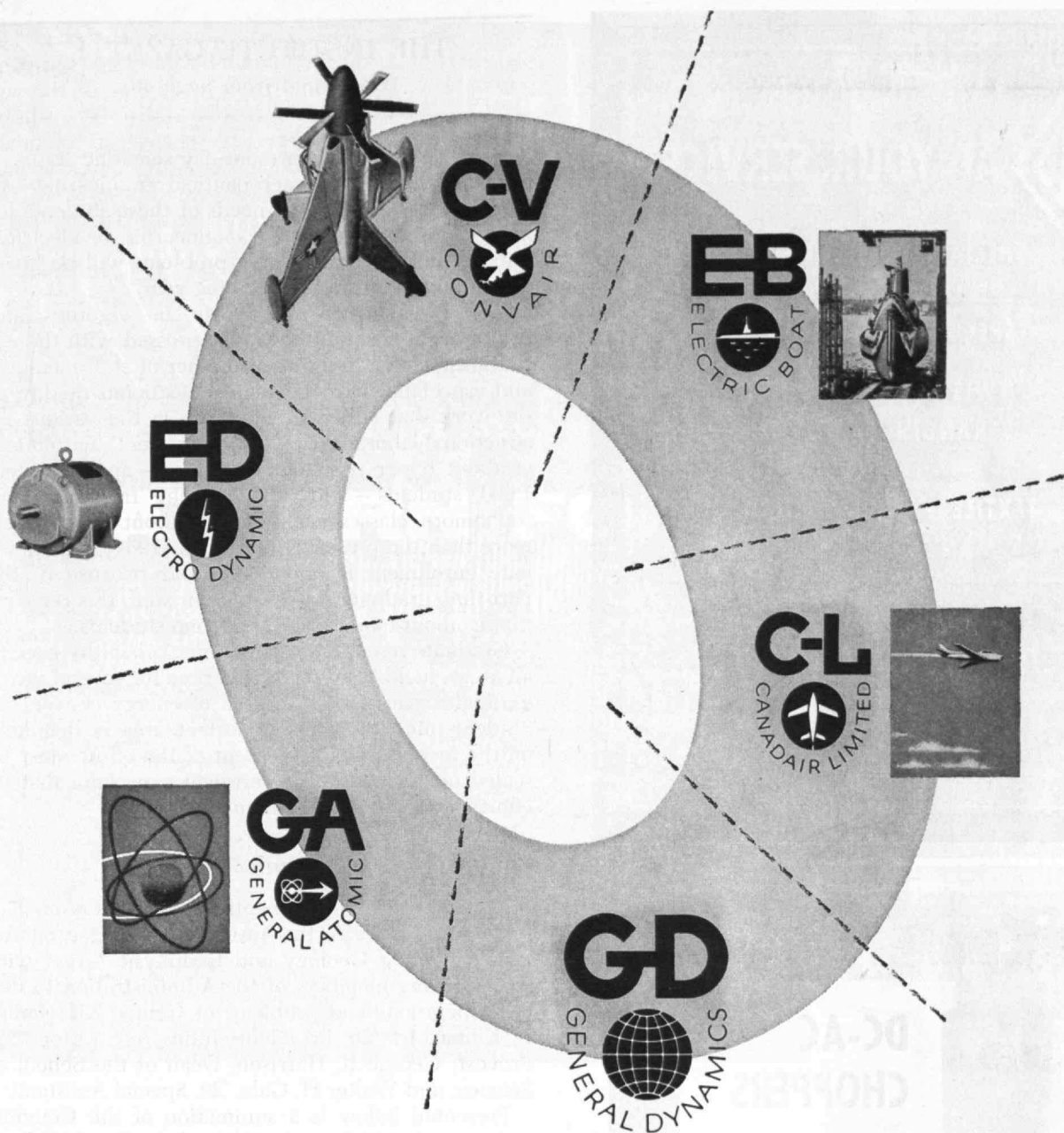
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(Continued from page 40)

define in terms of the present-day scientific status of mechanical, chemical, aeronautical engineering — to name merely a few — the needs of these students for knowledge about electrical engineering or electrical science fundamentals. These problems will be given much thought during the coming year.

The Department appears to be vigorous and healthy. The Committee was impressed with the enthusiasm shown by quite a number of staff members and especially with the high educational quality of the work that is being carried on in the various instructional laboratories. The Department's enrollment is about 6 per cent over last year — approximately 1,000 students — with the present freshman and sophomore classes each having about 60 students more than the present senior class [1954]. The graduate enrollment is about 340, and because of the part-time graduate status of junior staff, this registration is about equal to 170 full-time students.

Graduate research is maintaining a healthy pace in all areas, including for the first time for several years, graduate research in the area of energy conversion. Student interest in this important area is definitely on the increase, but the extent of the effort must be scaled up before the Department can claim that its efforts in this area are adequate.

Geological Problems

ASSEMBLING in departmental headquarters on December 6, 1953, the Visiting Committee on the Department of Geology and Geophysics* met with the following members of the Administration to discuss operations and problems of Course XII: James R. Killian, Jr., '26, President; Julius A. Stratton, '23, Provost; George R. Harrison, Dean of the School of Science; and Walter H. Gale, '29, Special Assistant.

Presented below is a summation of the Committee's report which was reviewed at the March 1, 1954, meeting of the M.I.T. Corporation and the April 2, 1954, meeting of the Executive Committee.

(Concluded on page 44)

* Members of this Committee for 1953-1954 were: David A. Shepard, '26, chairman, Walter J. Beadle, '17, Cecil H. Green, '23, George J. Leness, '26, Robert H. Winters, '33, E. L. DeGolyer, Hollis D. Hedberg, and Merle A. Tuve.

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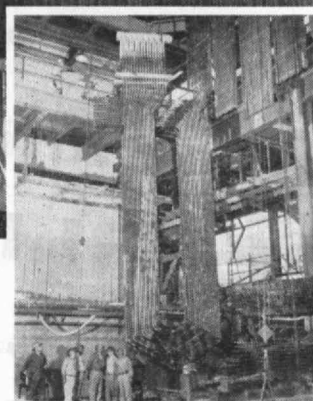
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THE INSTITUTE GAZETTE

(Concluded from page 42)

Professors Robert R. Schrock and Patrick M. Hurley, '40, Head and Executive Officer of the Department, respectively, described the departmental organization, courses of instruction, and the operations and current problems of the Department. A report giving details of the matters presented has been filed with Professor Gale.

In general, the Committee found the Department to be in good condition. It appeared to the Committee that the chairman and the executive officer of the Department had analyzed well the problems to be faced, and with sympathy and help from the Administration, were working toward a sensible handling of those problems.

The Committee's discussion of certain matters studied at the afternoon meeting is summarized very briefly in the following paragraphs:

1. The curriculum offered was discussed with a view to analyzing whether the balance between the quantitative sciences on the one hand, and the geological subjects on the other hand, seemed proper. Aware of rather strong differences of opinion among geologists and geophysicists as to what the proper balance is, it was the feeling of the Committee that the high quality of the basic quantitative science instruction given to freshmen and sophomores at the

Institute provided an advantage favoring the current curriculum over alternative ones, including additional geological subjects which could be introduced only at the expense of some of those quantitative science courses. This opinion was supported by belief in the benefits of the summer school in geology at Antigonish, Nova Scotia, and the co-operative plan in exploration seismology.

2. The Committee discussed the Department's difficulties in attracting graduate students with outstanding qualifications in competition with other institutions which can provide more attractive financial inducements. The M.I.T. Department has no fellowships of any kind under its own control, and no unrestricted research funds that can be used to finance students. As a consequence, students who need financial assistance tend to go to a competing institution which can offer such financial inducements, rather than to M.I.T.

3. The size of the Department's student body was considered in relation to the size of its faculty, the Department expense, and the quality of instruction and research by the Department. One suggestion was made that the student body was now somewhat too large, and several of the Committee expressed a more clearly defined opinion that the number of graduate students this year has been too large. Several Committee members felt that a Department of about the present size and staff should be preserved in order to maintain the Institute as one of the leaders in the field of geology and geophysics.

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A PLACE FOR GLADNESS

(Concluded from page 28)

Well, here is one way that we can spin into our existence activities which yield a conscious satisfaction that may be built to order.

Thrill of Membership in M.I.T.

And now it may be proper to point out that you already have a place for gladness which is always available — which will always be with you and which you may always rely upon to bring a deep sense of satisfaction, of gratification, of inner enjoyment. This resource is your past and present affiliations with this Institute.

During our lifetimes we relate ourselves to many kinds of human institutions toward which we develop varying shades of loyalty and of affection. As you review your affiliations with your Alma Mater I think you will agree that there are few institutions with as fine a record for unselfish and unqualified devotion to the present preparation and future welfare of the human beings in its charge. For many years I have sat in Faculty meetings and in departmental conferences and I have never yet seen an issue discussed in which the progress and advancement of the student or the student body held anything but first position in point of objective.

To march as you do, under such a lifetime banner should, I believe, offer a deep gratification which makes life the richer for you, every year that you are alive.

"They were glad . . ."

Here, then, at this, your 25th reunion, with so much of life behind and before you, you may properly list and appraise these and other satisfactions to make sure that no useful resource has been omitted. And, here I would make one additional suggestion. There can be for each of you a deep sense of elation, of inner joy, when you have built within yourself a sure faith that Someone greater than yourself is always near and ready to help. Within us all there are secret chambers where burns a holy flame, the constant presence of which lifts our hearts whenever we remember.

"I was glad when they said unto me,
'We will go into the house of the Lord.'"

Out of the rich satisfactions springing from our workaday accomplishments; out of the pride and admiration which we hold for those who have "run the good race"; out of an awareness of life's store of loveliness and beauty; out of the enjoyment of endeavor for endeavor's sake; out of the deeper satisfactions from affiliation with the Institute; out of the constant presence of a loving Companion, we may build into our hearts in the days to come, a place for gladness.

Today, gladness is especially uppermost in your heart. Plan, decide, determine, if but for a moment each day, to give gladness a place in your life — tomorrow and tomorrow and tomorrow!

SCIENCE FOR GOOD OF MANKIND

(Continued from page 30)

The auditorium and chapel, now under construction, are the latest additions to new M.I.T. buildings, and a dedicatory program for these new buildings is planned for May 8, 1955. With their completion, the Institute will be in a position to devote greater attention to the spiritual life of its students. Regarding these new buildings, made possible by a grant from the Kresge Foundation, President Killian's report stated, in part:

The small devotional chapel which we are building at M.I.T. . . . will be in the completest sense nonsectarian, equally available to individuals and groups of all faiths. Its purpose is twofold:

First, to stand as a symbol of the place of the spirit in the life of the mind and as a physical statement of the fact that M.I.T. has a right and a responsibility to deal with ideals as well as ideas and to be concerned with the search for virtue while we become proficient in the search for things.

Second, to provide ready opportunity for students and other members of our community to worship as they choose, to have on campus a building, beautiful and evocative of reverence and meditation, where those who wish may enter and worship in their fashion.

This twofold purpose of course includes the provision of opportunities for the separate faiths and groups to use the chapel each in their own way so long as this does not require special privilege. It also means that the chapel will be available for appropriate ceremonies such as marriages and other rites. The chapel will not embrace the full responsibilities of a church and thus will not compete with the neighboring churches which serve members of our community. . . .

The M.I.T. Community

In a section of his report bearing the title above, President Killian took justifiable pride in pointing out some of the highly significant ways in which members of the Institute's Faculty and staff, as well as its Alumni, are making major contributions to public or professional service:

The professional responsibilities assumed by members of our Faculty and staff, and the list of visitors who come to the Institute, constitute together an impressive supplement to the record of the Institute's contributions each year to science and technology. A survey of Faculty and staff activities, for example, suggests that at least 125 positions on national professional boards, panels, and committees were filled by members of this M.I.T. community during the past year. At least 24 major medals and awards for personal achievements came to members of the staff and Faculty during 1953-1954. In addition, more than 30 held elective offices in national professional societies and their local chapters. . . .

Faculty and Administrative Changes

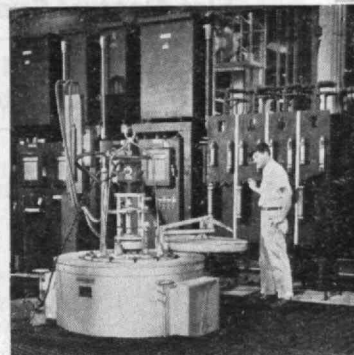
A section of the President's Report dealt with recent changes in the Institute's administrative and educational personnel, many of which have already been reported in the pages of The Review. Significant paragraphs in President Killian's report, which will

(Continued on page 48)

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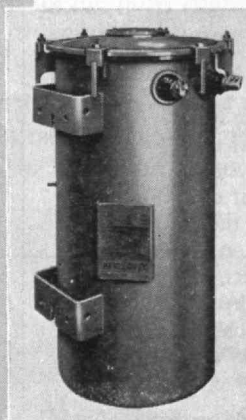
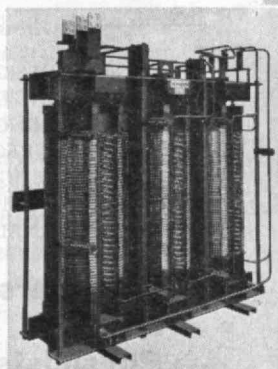
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SCIENCE FOR GOOD OF MANKIND

(Continued from page 47)

bring the reader of The Review up to date on major changes, are given here:

To succeed Admiral Edward L. Cochrane, '20, in the key post of Dean of Engineering, the Institute is most fortunate in securing Professor C. Richard Soderberg, '20, who, as Head of the Department of Mechanical Engineering, has demonstrated outstanding qualities of professional and academic statesmanship. He brings new strength and wisdom to our administrative team. . . .

Other important changes in our administrative organization included the appointment of Robert M. Kimball, '33, as Secretary of the Institute. Mr. Kimball succeeds Professor Walter H. Gale, '29, who asked to be relieved of administrative duties to devote full attention to plans for future development at the Institute. In his new post, Mr. Kimball is working with the Secretary of the Corporation and its committees to further new undertakings of the Institute. He has special responsibility for relationships with the various departmental visiting committees and for the Committee on Development. Professor Gale will also continue a close association with these projects.

Upon the recommendation of Vice-president and Treasurer Joseph J. Snyder, 2-44, Paul V. Cusick and Delbert L. Rhind were appointed assistant treasurers, and Wolcott A. Hokanson was appointed bursar to succeed Mr. Rhind. The Executive Committee approved the establishment of two new posts at the Institute, the Director of Physical Plant and the Director of General Services. Carl M. F. Peterson, '29, has been appointed Director of Physical Plant and R. Colin Maclaurin, a son of our former President, Director of General Services.

Following Professor Soderberg's appointment as Dean of Engineering, Professor James Holt, '19, Executive Officer of the Department of Mechanical Engineering, became acting head; later in the year Professor Jacob P. Den Hartog, who is widely known for studies in applied mechanics, was named to be in charge of the Department.

Other major administrative changes during the year included the appointment of Philip A. Stoddard, '40, as Associate Placement Officer; John W. Sheetz, 3d, '42, to succeed Mr. Stoddard as Assistant to the Director of General Services; Bruce F. Kingsbury, 2-44, as Executive Secretary of the Educational Council; J. Francis Reintjes as Director of the Servomechanisms Laboratory; and George E. Valley, Jr., '35, as Associate Director of the Lincoln Laboratory.

Upon the retirement from active duty of Colonel Charles F. Baish, '21, Colonel Charles M. McAfee, Jr., became head of the Department of Military Science. Dr. Dana L. Farnsworth has resigned as Medical Director, having developed here a vigorous and effective health program for our entire community, and Dr. James H. Means, '06, has become Acting Medical Director. . . .

Unsolved Problems—Unfinished Business

An important problem confronting all colleges is the increasing rate of cancellations on the part of those admitted to study. As against an average shrinkage of 35 per cent for the nation's colleges as a whole, 48 per cent of the students accepted by M.I.T. last year failed to register. One of the principal reasons for the low yield in freshman registration has been the tendency of applicants to apply to more than one institution and then to postpone making a choice until the

(Continued on page 50)

"The day my son's future began"



"Ken knocked around quite a bit after college. Tried several jobs and did well. But he was never really satisfied. He'd either get bored with the work or frustrated with routine advancement. I didn't worry though. He's bright, sensible, and I knew he'd establish himself soon enough.

"Then, about a month ago Ken breezed into my study and somewhat breathlessly announced that he'd decided to go into the life insurance business. Before I could even look surprised, he explained that he had always been interested in people and that this would give him an opportunity to work more closely with them. And his eyes brightened

when he pointed out how, as an agent, he'd be his own boss—running a business all his own.

"He went on at a mile-a-minute explaining how he'd be thoroughly trained by New York Life experts—with a good salary while learning. How he figured that once he was on his own he'd be able to give his future family the same kind of comfort and security he had always known at home. And he wound up telling me how, someday, he hoped to retire with a good income—just as I will soon myself.

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SCIENCE FOR GOOD OF MANKIND

(Continued from page 48)

last minute. President Killian also called attention to the growing competition among applicants for scholarship assistance. Although no easy way of meeting these problems is at hand, better counselling in the secondary schools may minimize the seriousness of the first problem. The second problem is being studied by the College Scholarship Service under the sponsorship of the College Entrance Examination Board, with which M.I.T. is co-operating.

Other problems confronting the Institute were also mentioned by Dr. Killian in his annual report:

Corporation visiting committees have made numerous recommendations for expenditures in behalf of academic departments which we have so far been unable to cover. These include \$40,000 for the completion of essential equipment in the Hydrodynamics Laboratory, \$50,000 for equipment in the Food Technology Laboratories, and \$75,000 for equipment in the Metals Processing Laboratory. I have spoken elsewhere of our need for funds to establish a solid program in psychology and "freedom money" to enable members of the staff to do those valuable things which cannot normally be charged to available funds but which will contribute to their professional development.

One of the most critical needs in a specific field at the Institute is for more adequate financing of our Department of Food Technology — a department which is now too dependent upon current funds. Indeed, we have many such enterprises at the Institute which are too dependent on current funds for support. In the immediate years ahead we must seek to secure funds to insure more stability for their activities. This is one of the reasons why I stress year in and year out the need for increased endowment. I do not contend that endowment is the whole answer to our financial problem or that we should seek to be relieved of the responsibility of demonstrating year in and year out that we can justify current support; our problem is, rather, that the Institute in its rapid development during recent years has outgrown even the minimum amount of endowment that it should have to provide the necessary stability and particularly to cover its permanent tenure commitments. . . .

In Conclusion

The concluding paragraphs of President Killian's report to the Corporation state:

These notes on the past and the future of our institution are colored at every point by the catastrophe of Karl
(Concluded on page 52)

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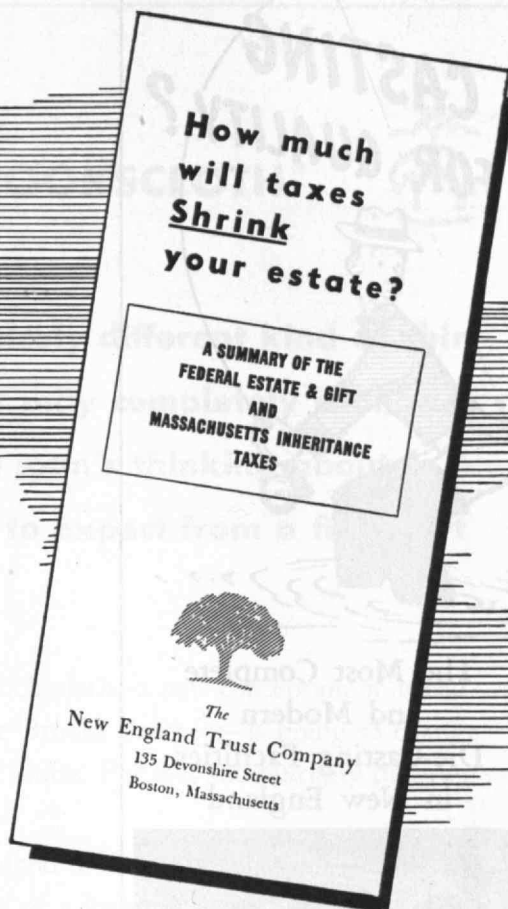
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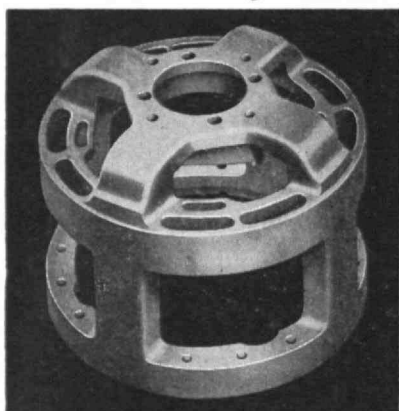
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SCIENCE FOR GOOD OF MANKIND

(Concluded from page 50)

Compton's death. So much of what the Institute means to those who study and work here and to the public, so much about it that is beloved and admired, reflects his influence and his leadership. In contemplating the loss we have suffered we can overcome the deep sense of tragedy only by realizing the permanence of his contributions. The Massachusetts Institute of Technology will always reflect his greatness and each of us who knew and worked with him will have a sense of gladness in having been associated with him. Could he do so, he would be the first to stress the motto inscribed in the marble fireplace in his office: "Alia initia e fine." Thanks to him there will be many new beginnings.

One word more. In all of Karl Compton's career at the Institute and in all that he did for it he was supported and assisted by Mrs. Compton. She too has helped to make this institution a nobler, happier and friendlier place, and the combination of Karl and Margaret was a partnership greater than the sum of its parts. We hope that Mrs. Compton will long maintain her close association with the Institute community, assured that she is beloved and cherished as a member of the Institute's family.

All in all, Dr. Killian's annual message to members of the Corporation of M.I.T. presented a stimulating, thought-provoking analysis of current conditions and future aspirations of the Institute. It differs from similar reports of the past in the extent to which it is concerned with the spiritual side of man's education, in the recognition that study of the physical sciences can be — and at M.I.T. is — a broadening influence, and in the emphasis it places on the need for public recognition of the manifold beneficent uses of science.

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FRESH WATER FROM THE SEA

(Continued from page 20)

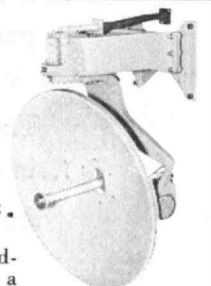
narrow channels for the flow of water (see Fig. 5). Salt water is fed into every second passage, whereupon the applied electrical potential causes the positive ions to move out through the negatively charged sheet on one side, and the negative ions to move out through the positively charged sheet on the other side of the salt-water channel. The ions of both types then appear in the second set of water channels and recombine to form salt. The net result is that the water in one set of water channels becomes depleted of salt and purified, while the salt concentration increases in the other set of water channels. The principal need for electric power is to cause motion of the salt ions — almost none is used to neutralize the electric charges on the ions, as in ordinary electrolysis. Because of this, power requirement is reduced.

Ionics, Inc. of Cambridge, Mass., has developed not only the ion-selective membranes but new equipment and processes for their application. Medium-sized units for purifying brackish water have been built and operated successfully, but no large-scale de-salting of sea water has yet been attempted. The process is being continually improved, and it is difficult to predict with assurance the ultimate cost of obtaining fresh water from the sea by this method.

Widely differing estimates have been made for the treatment of sea water by this method. Ellis estimates the total costs for a very large plant to be

(Continued on page 56)

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FRESH WATER FROM THE SEA

(Continued from page 54)

\$0.32 per 1,000 gallons fresh water.⁸ This is based on a power consumption of 20 kilowatt-hours per 1,000 gallons at 0.5 cent per kilowatt-hour. The estimated power consumption may be optimistic, but the figure of \$0.32 for sea water is not much out of line with another estimate of \$0.10 per 1,000 gallons for fresh water from Texas brackish water containing 10,000 parts per million of salt (a little less than one third the salt content of sea water). This latter figure, appearing in the 1954 report of the government Saline Water Program,¹¹ assumes power at 0.3 cent per kilowatt-hour, and lower amortization rates than Ellis. On a basis comparable to Ellis', this figure might become \$0.40 starting with sea water. Ionics, Inc., however, is quoted by Representative Arthur L. Miller of Nebraska⁵ as estimating the cost of water from sea water at \$1.50 per 1,000 gallons using present resin membranes, and \$0.40 using "ideal" membranes.

The cost which may reasonably be attained doubtless lies somewhere between these limits—perhaps in the range of \$0.75 to \$1.00 per 1,000 gallons. If so, the process is evidently the cheapest of any which have been operated on a commercial scale for the production of fresh water from sea water.

Other Methods

Literally dozens of physical phenomena may be employed as the basis for separating water and salt, and there are hundreds of patents relating to the production of fresh water from the sea. Some involve gravity effects, with or without the help of electricity, using either natural gravity or a centrifuge. One patent proposes that sea water be heated to a high temperature at several thousand pounds pressure under which conditions distillation may be accomplished without supplying any heat of vaporization. Solid adsorbents have been proposed, although it might seem more difficult to remove the salt or water from the adsorbent than from the original sea water. Experiments have been made with thermal diffusion, the process employed on an experimental scale for the separation of uranium isotopes. This scheme proved too expensive for the Manhattan District, so would appear to be impractical for cheap water. Other proposals involve the use of ultrasonics, ultra high-frequency electrical energy, streaming potentials, electrostatic and electromagnetic effects.

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The high cost of getting fresh water from the sea by known and developed processes is discouraging, and the obstacle in the way of progress towards really cheap water is the lack of good new ideas. In this situation the government has wisely allocated a modest amount of money to support research on new processes, with the idea that government support of an inventor's concept in the early stages of its development may carry it to the point where commercial development is warranted. These research grants are administered by the Saline Water Conversion Program of the Department of the Interior. The availability of funds and publicity⁴ regarding the problem have already stimulated a number of new and promising ideas, though the program has been under way less than two years.

One of these government-supported research studies¹¹ is giving a new look at an old idea—that pure water can literally be pushed out of salt water by forcing it through membranes permeable to water but not to salt. Such membranes exist, and the use of one of the many new plastics may make the scheme practical. The idea is to reverse the familiar laboratory demonstration of osmosis (see Fig. 6). A bulb covered with a porous membrane is attached to the end of a long open tube containing salt solution, and the bulb end of the tube is dipped into pure water. The water is found to pass into the salt solution in the tube, and the flow does not stop until the level of the solution in the tube rises many feet above that of the water into which the tube is dipped. The hydrostatic pressure of the column of solution is the osmotic pressure, which for sea water is 350-400 pounds per square inch. The process can be reversed by applying pressure to the open top end of the tube, and water forced out of the solution. The solution in the tube then becomes more concentrated, since the salt cannot get through the membrane coating the porous bulb.

The theoretical minimum power to pump the water through the membrane is 2.8 kilowatt-hours per 1,000 gallons, as for all other processes. The actual power must be greater in order to obtain reasonable rates of passage of water through the membrane, and the possibility of low actual power costs competitive with other processes will depend on the development of membranes which are not now known. Chances of success are not great, but the idea is sound.

It is a sad commentary on the state of science that we do not know how to perform the common operation of separating a salt from water without using

(Continued on page 58)

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FRESH WATER FROM THE SEA

(Continued from page 57)

several times the theoretical minimum power. If the research on methods of purifying sea water leads to improvements in this situation the results will find wide application in many industrial processes.

Summary of Costs

Although cost figures for producing fresh water from the sea have been suggested for several of the principal processes, it must be admitted that these are little better than rough estimates. Published cost figures for these processes are based on widely varying costs for power and amortization, and the basis for each estimate must be scrutinized before the result can have meaning. The figures listed in the following table are based on power at 0.5 cent per kilowatt-hour, steam at \$0.60 per 1,000 pounds, and fixed charges at 15 per cent per year:

	Total Cost \$ per 1,000 Gallons
Simple distillation	5.00-10.00
Multiple effect distillation	3.80
Vapor-compression distillation	1.70
Solar distillation	2.85
Freezing	0.75-1.25
Chemical precipitation	30.00
Ion-exchange resins	20.00
Ion permeable resin membranes	0.75-1.00

The estimates for simple distillation, ion exchange, and chemical precipitation do not have to be close, since the costs are prohibitive on any basis. The estimates for multiple effect distillation and vapor compression distillation are fairly reliable (probably within 25 per cent) since these processes have been used on a large scale. The figure for solar distillation is probably low on the basis of present costs of collectors, but new collector designs might change this picture somewhat. The cost for the freezing process is only a very rough guess and is doubtless low, since the method has never been employed on a commercial scale. The estimate for the resin membrane method may be off by 30 per cent, but is close enough to suggest that this is one of the cheapest of presently developed methods.

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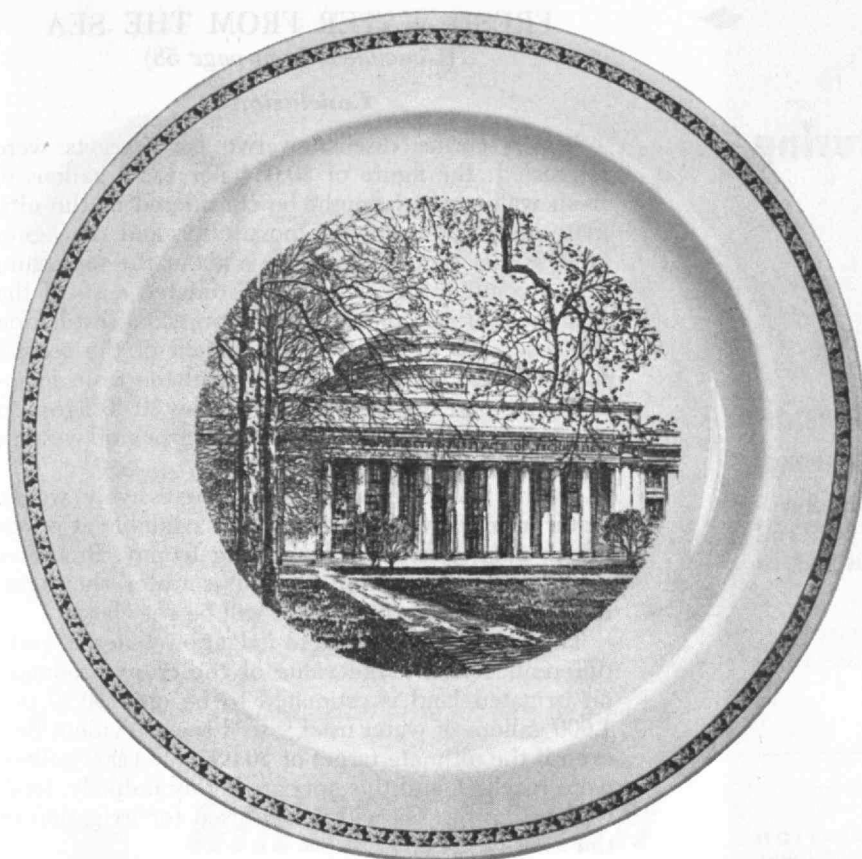
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FRESH WATER FROM THE SEA

(Concluded from page 58)

Conclusion

In the earlier discussion two cost targets were suggested: the figure of \$0.084 per 1,000 gallons of fresh water, which might be considered as the ultimate and quite nebulous possibility, and the figure of \$0.40 per thousand, which is about the top figure which communities now pay. Estimated costs of the resin-membrane and vapor-compression distillation processes are within two to fourfold of the second target where sea water is used, and the resin membrane method can probably meet the \$0.40 figure in producing fresh water from many types of western brackish water.

As the water situation gets progressively worse, water from sea water can be made available at prices which many users will be willing to pay. Processes exist for the alleviation of serious water shortages, albeit the investment in plant will be very large.

The situation in regard to irrigation water is quite different. The average value of the crops produced on irrigated land is estimated to be only \$0.10 per 1,000 gallons of water used,¹⁰ so it seems evident that even if the ultimate target of \$0.084 per 1,000 gallons were reached, and this appears highly unlikely, fresh water from the sea will not be used for irrigation of the average crop.

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Another potent procedure in the endeavor to defer the encroachment of baleful old age is the annual physical examination. If everyone would adopt the salutary custom of going to a competent physician at least once every year for a complete medical overhaul, or physical appraisal, minor defects and troubles could be detected and corrected before they have the opportunity to become serious. Experience has shown that practically nobody over the age of 40 will be found in a state of perfect health, although some patients may approach it. The annual health examination, if properly conducted and adequately followed up, makes a real and substantial contribution to personal and public health.

As pointed out in a previous article,[†] the United States is rapidly becoming a nation of older people. More than 8 per cent of our population, or about 13.4 million persons were aged 65 or over in 1953, and of these somewhat more than one third were 75 or more. The enrichment of old age in this country is, therefore, a matter of great sociological and economic, as well as medical and biological significance. At least one fifth of the men and one half of the women who have now attained 65 years may expect to survive beyond the age of 80.

"Grow old along with me!" wrote Robert Browning in his *Rabbi Ben Ezra*, "The best is yet to be, the last of life, for which the first was made." Old age is an interlude in life which can be, and should be reasonably productive, gracious, and salubrious.

[†] Tobey, James A., "Is There a Limit to Human Life?" *Technology Review*, 56:349 (May, 1954).



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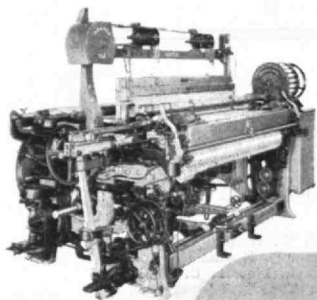
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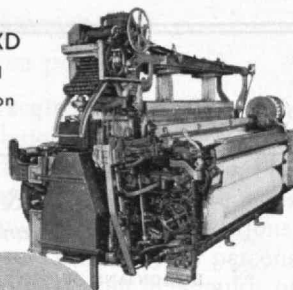
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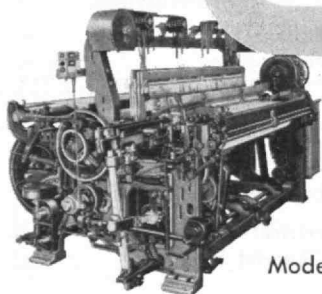


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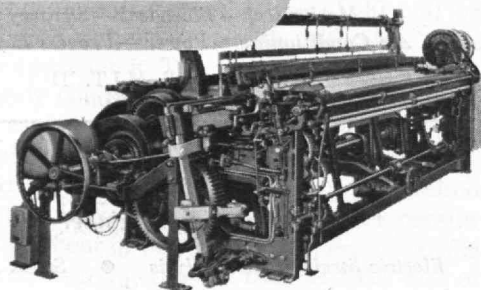
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Alumni AND Officers IN THE News

Awards and Rewards

CLAUDE E. PATCH'02 was awarded a medal by the State Executive Committees of the Y.M.C.A.'s of Massachusetts and Rhode Island in recognition of his long and distinguished service to youth as a member of the Camp Beckett Committee.

HENRY H. SAYLOR'02 was presented the Edward C. Kemper Award by the American Institute of Architects. Mr. Saylor was cited as: "Master of Words, who through a long lifetime of dedication to architectural journalism has served his profession with inviolate integrity. Under his editorship *The Architectural Review*, *Country Life in America*, *House and Garden*, *Architecture*, and currently *The Journal of the Institute*, have provided food for the mind, stimulus for the imagination, and nourishment for the spirit. The latest of his many published books, *The Dictionary of Architecture*, is an indispensable item in professional libraries. For the sum of his contribution and the goodness of his influence the Profession and the Institute are gratefully appreciative."

CLARENCE D. HOWE'07, Canadian Minister of Trade and Commerce and Minister of Defense Production, was presented the Daniel Guggenheim Medal. The medal was awarded in Los Angeles by the Society of Automotive Engineers, the American Society of Mechanical Engineers, and the Institute of the Aeronautical Sciences. Mr. Howe was honored for "initiating and organizing commercial air routes and services, promoting aeronautical research, development and production of aircraft and engines, and advancing the art of aeronautics."

EDITH CLARKE'19 has been chosen by the Society of Women Engineers as the 1954 recipient of their annual award to a woman who has made significant contribution to engineering.

C. LEVON EKSERGIAN'21, executive engineer of The Budd Company, was awarded the George R. Henderson Medal by The Franklin Institute of Pennsylvania for his outstanding accomplishments in the field of railway engineering, at the Institute's Medal Day ceremonies in October.

JOSEPH H. KEENAN'22, Professor of Mechanical Engineering at M.I.T., was awarded the Worcester Reed Medal for outstanding contributions to literature by the American Society of Mechanical Engineers.

RALPH H. CROSBY'29 has been presented with a service emblem by Shell Oil Company in recognition of his 25 years of service with the Company. He received the award at recent ceremonies in Shell's New York headquarters.

RODNEY H. SMITH'43 received the Air Force Decoration for Exceptional Civilian

Service at ceremonies recently at the Strategic Air Command Headquarters at Offutt Air Force Base in Omaha, Neb. Dr. Smith is one of only three others in the Strategic Air Command who have received this distinction, the highest Air Force honorary civilian award which can be conferred for exceptionally outstanding services. The award was made for his performance of duty as chief, Aircraft and Missiles Division, Strategic Air Command, from 1952-1954.

WILLIAM S. COLEMAN, Jr., 9-46, was recipient of the Award of Achievement by the Engineering Society of Detroit at the 18th annual meeting. Mr. Coleman was selected because of his outstanding ability in his chosen profession and his service to his church and community.

PIETRO BELLUSCHI, M.I.T. Dean of the School of Architecture and Planning, has been elected to the Royal Danish Academy of Fine Arts.

WILLIAM EMERSON, Dean of the Institute's School of Architecture, *Emeritus*, and Member of the Corporation was honored by the Boston Society of Architects at the 86th Convention.

Part of the citation read as follows: "An able architect . . . he early found his way into the ranks of 'those who gladly teach' and it was in this field, as Dean of the School of Architecture of M.I.T. and longtime Secretary of the Rotch Travelling Scholarship Committee, that he came to exert the wise and beneficent influence he did on successive generations of architects."

Appointments and Elections

RICHARD H. RANGER'11, President of Rangertone, Inc., of Newark, N. J., was elected executive vice-president of the Audio Engineering Society.

RALPH A. FLETCHER'16 was elected president of the Smaller Business Association of New England, Inc.

WILFRED O. LANGILLE'19 has been elected president of the Diehl Manufacturing Company, electrical subsidiary of The Singer Manufacturing Company.

E. KENNETH CLARK'20, Vice-president of Johns-Manville Sales Corporation, was elected president of the National Mineral Wool Association.

PER K. FROLICH'23, a Vice-president of Merck and Company, Inc., has been appointed to the Chemical Corps' top civilian scientific post. Dr. Frolich will serve in the dual capacity of deputy chief chemical officer for scientific activities, and chief scientist for the Chemical Corps of the Department of the Army.

CHARLES ALLEN THOMAS'24, President of Monsanto Chemical Company, has been elected to the board of directors of Washington University.

WILLIAM W. McDOWELL'30 has been appointed a vice-president of International Business Corporation. Mr. McDowell will head the company's research and engineering development work.

E. RALPH ROWZEE'30, Vice-president and Manager of the Polymer Corporation, was elected president of the Chemical Institute of Canada.

EMILIO G. COLLADO'31 has been elected treasurer of the Standard Oil Company (New Jersey).

CHARLES D. LUKE'31, formerly professor and chairman of the Department of Chemical Engineering at Syracuse University, has been appointed director of the Office of Classification, Atomic Energy Commission.

BENNETT ARCHAMBAULT'32 has been chosen president of the Stewart Warner Corporation of Chicago, Ill.

JOHN LAWRENCE'32 was recently elected executive vice-president of the Joy Manufacturing Company of Pittsburgh, Pa.

CARROLL L. WILSON'32 has been appointed vice-president and general manager of the Metals and Controls Corporation in Attleboro, Mass.

WILLIAM E. RAND'33, formerly director of physical sciences research at Stanford Research Institute, has become a vice-president of Newhall Land and Farming Company. Mr. Rand will direct a future development program for the company.

WILLIAM SHOCKLEY'36, former research physicist of the Bell Telephone Laboratories, is the new director of research for the Weapons Systems Evaluation Group. Primary function of the W.S.E.G. is to respond to calls for service and assistance from the Joint Chiefs of Staff and the Assistant Secretary of Defense for analytical studies and evaluations of the comparative effectiveness and costs of present and future weapons systems.

M. STANLEY LIVINGSTON, Professor of Physics at the Institute, has been elected chairman of the Federation of American Scientists for the 1954-1955 season.

SIR ALEXANDER R. TODD, prominent British scientist was appointed as Arthur D. Little Visiting Professor of Chemistry at the Institute for the fall semester. Sir Alexander, Professor of Organic Chemistry at the University of Cambridge, England, will deliver a series of 20 lectures on "Selected Topics in Natural Product Chemistry."

He is chairman of the British Government's Advisory Council on Scientific Policy. In 1949 he was awarded the Davy Medal of the Royal Society of London for the year's most important European or Anglo-American discovery in chemistry. He was knighted by Queen Elizabeth last July.

Page by Page

By WARREN K. LEWIS'05, Arthur H. Radasch, and H. Clay Lewis, *Industrial Stoichiometry* (New York: McGraw-Hill Book Company, Inc., 1954, \$7.50).

By WILLIAM H. McADAMS'17, *Heat Transmission* (New York: McGraw-Hill Book Company, Inc., 1954, \$8.50).

By CHARLES STARK DRAPER'26, WALTER McKAY'34 and SIDNEY LEES'48 *Aeronautical Engineering, Volume 2* (New York: McGraw-Hill Book Company, Inc., 1953, \$15.00).

By H. S. TSSEN'36, *Engineering Cybernetics: The Science of Control* (New York: McGraw-Hill Book Company, Inc., 1954).

By JOHN C. JOHNSON, 6-46, *Physical Meteorology* (Cambridge, Mass.: Technology Press, M.I.T.; New York: John Wiley and Sons, Inc.; London, England, Chapman and Hall, 1954, \$7.50).

By ARTHUR R. VON HIPPEL, Professor of Electrophysics at M.I.T., *Dielectrics and Waves* (New York: John Wiley and Sons, Inc., 1954, \$16.00).

Obituary

WILLIAM A. PRENTISS'75, August 22.
JOHN L. BIXBY, Jr., '87, October 20, 1953°
RALPH E. CURTIS'87, June 2°
HENRY F. HILL'87, May 11°
ROBERT B. SMITH'88, February.
HARRY B. BURLEY'90, August 23°
LEWIS A. DUNHAM'91, April 14°
EDWARD F. GLOVER'92, date unknown°
MAURICE B. BISCOE'93, December 29, 1953°
JAMES C. BOYD'93, January 18°
ISAIAH C. HANSCOM'93, June 30°
AUGUSTUS B. WADSWORTH'93, June 8°
HARRY W. GARDNER'94, July 25°
GEORGE L. MOWER'94, February 14°
N. T. QUEVEDO'94, 1950°
CHARLES P. COOKE'95, September 2.
STEPHEN H. PLUM, 2d, '95, February 17°
ERNEST C. ATKINS'96, July 14°
HELEN CHAMBERLAIN DODD'96, August 23°
ROBERT D. FLOOD'96, May 3°
HARRY G. HAMLET'96, January 24.
HENRY A. TOZIER'96, August 20°
JOHN J. COLLINS, JR., '97, August 14°
ALFRED S. HAMILTON'97, September 26, 1953°
ARTHUR L. JENNINGS'97, July 26°
HENRY E. WORCESTER'97, April 9°
HUNTLY W. DAVIS'98, October, 1952.
JOHN H. LARRABEE'98, March.
GRANVILLE SMITH'98, July 22.
EVERETT E. GOODELL'99, July 26.
ERNEST E. CLEVELAND'00, March 29°
LOUIS A. CROWELL'00, September 1°
HENRY D. JOUETT'00, March 7°
LEON E. CROUCH'01, May, 1952°
JOHN F. MCGANN'01, April 12°
ARTHUR K. TRENHOLME'01, January°
ELMER M. HERVEY'02, November 10, 1953°
ROLAND B. PENDERGAST'02, July 7°
WALTON H. SEARS'02, August 7.
CHARLES L. WRIGHT'02, May 30°
KATHERINE BLUNT'03, July 29°
AUSTIN D. JENKINS'03, April 29.

Rung by Rung

JOHN G. TRUMP'33, Professor of Electrical Engineering, will conduct research at M.I.T. on physical and clinical studies with high-energy electrons sponsored by a cancer research grant made by the Damon Runyon Memorial Fund.

BASIL W. PARKER'33, formerly professor of Biology at Lehigh University, has become head of that Department.

GEORGE R. GRIFFIN'41 has been appointed chairman of the Division of Chemistry of the Lowell Technological Institute.

Fellowships from the John Simon Guggenheim Memorial Foundation were awarded to HERMAN FESHBACH'42, DAVID H. FRISCH'47, and GEORGE F. KOSTER'48.

MARTIN W. ESSIGMAN'47 has been promoted to head of the Department of Electrical Engineering of Northeastern University.

JACOB P. DEN HARTOG, M.I.T. Professor of Mechanical Engineering, has been appointed head of that Department.

WALTER F. ROPER'03, April 1°
HOMER D. STRONG'03, June 26°
MRS. JOHN D. MCKAY'04, April 23°
S. JANET JAMESON'05, January 22, 1952°
SIDNEY T. STRICKLAND'05, July 10°
KILBORN WHITMAN, Jr., '05, July 12°
LOUIS L. BOOTH'06, June 4.
DANA M. WOOD'06, May 10°
CHARLES E. ALLEN'07, August 25°
RODERIC B. BARNES'07, May 17°
BIRENDRA C. GUPTA'07, November 28, 1953°
ANDRE T. KOLATSCHEVSKY'07, May 13°
WINSOR SOULE'07, August 14°
EDWARD J. TULLY'07, July 17°
SIDNEY D. WELLS'07, May 16°
CLARENCE W. CLARK'08, June 14.
HUBERT W. FLAHERTY'08, August 16.
LEONARD CLAPPER'09, November, 1953°
MARCUS J. COLE'09, February, 1954°
EUGENE L. GRUNSKY'09, February, 1946.
FRANK J. LANGE'09, December 31, 1953°
MATTHEW B. BLACK'11, May 26°
DONALD N. FRAZIER'11, May 25°
HAROLD G. JENKS'11, June 15°
FREDERICK W. EATON'13, April 22.
LOUISA M. NORTON'13, August 2°
WILLIAM C. PURDY'13, July 15.
IGNAZ D. SCHILOWSKY'13, April 25°
HALFORD H. AMBLER'14, July 23°
ROSS H. DICKSON'14, July 9°
LAURENCE P. GEER'15, August 12.
CHARLES G. PAINE'15, November 22, 1953°
EMERY C. CARTER'16, July 17.
HORACE E. HALL'16, October 2, 1953.
LYMAN QUINCY'16, August 16.
FREDERICK D. FOSS'17, June 17°
GENJIRO HAMABE'17, January 19, 1939.
WILLIAM G. HANNAFIN'18, June 9.
W. BARRINGTON MILLER'19, February 26.
AUSTIN D. HIGGINS'20, March 25°
BEDROS KEMKEMIAN'20, June 2.
CLARENCE M. SYNER'20, April 10°
JOSEPH W. GARTLAND'21, August 15°
VICTOR C. HASSOLD'21, April 30°
HAROLD E. SMYSER'21, January 28.

Honored with Doctoral Degrees, June, 1954:

WALTER G. WHITMAN'17, Professor of Chemical Engineering at M.I.T., by Northeastern University.

FREDERICK H. NORTON'18, Professor of Ceramics at M.I.T., by the University of Toledo.

EDWIN SHARP BURDELL'20, President of the Cooper Union, by Ohio State University.

EDWARD L. COCHRANE'20, Institute Vice-president for Industrial and Governmental Relations, by the Stevens Institute of Technology.

CRAWFORD H. GREENEWALT'22, President of E. I. du Pont de Nemours, by the Polytechnic Institute of Brooklyn.

JAMES HARRINGTON BOYD'26, Visiting Professor in Chemical Engineering at Columbia University and a Director of Dasher Rubber and Chemical Company, by Kenyon College.

HAROLD S. CLEMENS'22, June 17°
WILLIAM M. LAUGHTON'22, July 21.
HAROLD D. MAHONEY'22, May 4.
DONALD H. MCCREERY'22, June 11, 1951.
LUTHER REYNOLDS'22, June 15°
LEE A. SWEM'22, May 24°
RAYMOND O. BRINK'23, April 24°
CLARENCE F. HOFSTETTER'23, April 20.
WILLIAM T. ROTH'23, May 5.
CARLO VICARIO'24, July 27°
JOHN CARROLL BETTS'25, October 15, 1953°
DONALD S. ROSS'25, May 3°
LEWIS P. BUCKNER'26, September 10.
WILFRED E. CARTER'26, May 23°
HENRY O. GRILLS'26, July 8, 1950.
XAVIER GURZA'26, November, 1953.
VOLNEY C. FINCH'27, November 9, 1953°
GEORGE M. DE CAMP'28, July 21.
KENNETH H. CAMPBELL'29, May 17.
JAMES F. MCCARTHY, JR., '29, May 17.
LOUIS H. MOLLENKOPF'29, April 23, 1953.
HAROLD A. POTTER'29, March 7.
THOMAS A. MIDDLEBROOKS'30, date unknown.
IGNATIUS A. WOJTCZAK'30, February 26.
MENDEL N. PACK'31, June 13, 1953.
WILLIAM R. TOOLE'31, September 1.
THOMAS W. MULLARKY'32, November 25, 1947.
KENNETH P. ABBE'33, December, 1953.
BURT E. MORITZ'33, May 4°
IRVING E. GUAY'34, June 26.
FRED A. JONES, JR., '35, April 21, 1952.
SETON S. WILLIAMS'37, May, 1950°
CHARLES W. CLIFT'39, September 5.
NORMAN L. HAIGHT'39, October 20, 1953.
RUTH N. CRAWFORD'41, June 2, 1952.
WILLIAM G. TULLER'42, September 5.
WILLIAM H. MARTIN'45, July 5°
CONLEY C. LASTER, JR., '49, May 29, 1952.
ERNEST J. GARBARINO'51, June 19°
ROBERT S. ARBUCKLE'52, July 12°
CLAUDE P. T. HILL'52, November 25, 1953°
JOHN R. MONTGOMERY'53, April 27, 1951.
° Mentioned in Class Notes.

News FROM THE Clubs AND Classes

CLUB NOTES

M.I.T. Club of Cincinnati

The Club was host to seven members of the Class of 1958 at a meeting held on August 26 at the University Club. Gordon J. Burrer, Jr., '55, Allan H. Clark '57, Eddy R. Hair '54, and F. Lawrence Holmes '54, who were also guests of the Club, were able to meet the freshmen and to supply first hand information in response to their questions. The club members and their guests were entertained by showing of the RKO movie short filmed at the Institute and entitled "Men of Science." Gordon Burrer and Larry Holmes provided a highlight of the evening with their Kodachrome color slides and commentary on the victorious trip of the M.I.T. Championship Crew to the Thames Challenge Trophy in England in early July. Both Gordon and Larry were members of this crew.

After refreshments had been served a formal meeting of the Club was held for the purpose of electing officers. Elected for the ensuing year were: Frank J. Iskra '48, President; William P. Cadogan '41, Vice-president; Sampson I. Crew '34, Treasurer; and Gerald S. Burns '51, Secretary. Club members who attended were: Alexander C. Brown '25 (retiring secretary), Gerald S. Burns '51, Stephen J. Chamberlin, Jr., '51, Jonh P. Comer, Jr., '48, William C. Cooley, 10-44, Gordon L. Foote '38, Wilton M. Fraser '47, Frank J. Iskra '48, John H. Morgenthaler '51, James W. Pearce '37, Raymond W. Pelley '45, George F. Schatz '30 (retiring president), Robert B. Schildknecht '30, James S. Stolley '52, and Edmund H. Traknis '48. — GERALD S. BURNS '51, *Secretary*, 2368 Victory Parkway, Cincinnati 6, Ohio.

M.I.T. Association of Cleveland

The last meeting of the 1953-54 season of the M.I.T. Alumni Association of Cleveland was featured by an election of new officers. W. H. Robinson, Jr., '24, was elected president succeeding Howard P. Ferguson '27, and Fred Reuter '38 was elected vice-president succeeding Lewis Fykse '41. William M. Folberth, Jr., '41, submitted his resignation as secretary, necessitated by the pressure of business, and the undersigned will complete his term. This meeting, which was a dinner meeting at the University Club on June 22, was the annual business meeting. Our treasurer, Jay P. Auwerter '38, reported, through Lew Fykse, that the treasury is delightfully solvent, with approximately \$400 in the general fund and \$800 in our scholarship fund. Two scholarship awards of \$250 each have been pledged from that scholarship fund, for students entering M.I.T. in the fall of 1954. The only other report received was that of the Nominat-

ing Committee, Alan A. Gould '10, Chairman, whose slate was unanimously approved as reported above. Our new president, Bill Robinson, spoke briefly and also led a rising demonstration of appreciation to outgoing officers Ferguson and Fykse.

The speaker of the evening was R. J. Maggass '49, who spoke on "The Role of Computers in Statistics." Mr. Maggass is an expert on computers, and did his graduate work in this field at M.I.T. He delivered an extremely interesting and informative lecture on mechanical and electronic computers, illustrated with slides. Mr. Maggass led a discussion period after the lecture. — HERBERT J. HANSELL, 2-46, *Secretary*, 1759 Union Commerce Building, Cleveland 14, Ohio.

M.I.T. Club of East Tennessee

The fall meeting of the Club on September 10 was featured by the showing of three movie reels. The RKO-Pathe film "Men of Science," borrowed from the M.I.T. Photo Service, was followed by an Atomic Energy Commission film on the construction of "Nuclear Reactors for Research." The third reel was a U. S. Navy presentation entitled "Project Tinkertoy," depicting mass production of electronic equipment by the modular design system. Plans were outlined for an inspection trip to the graphite reactor and the radioisotopes area at Oak Ridge on October 29.

The Club regrets that its former treasurer, Dana M. Wood '06, who resigned last winter in anticipation of retiring to Massachusetts, passed away in Wellesley, May 10.

We found out at this meeting that we are losing another of our most faithful members, this time by transfer. Van Court M. Hare '23 leaves TVA October 1 to accept a position in Boston with Charles T. Main, Inc., where he will be connected with the St. Lawrence seaway project. The Club passed a resolution of regret at losing such a valued member, and we wish him success in his new position.

Mrs. Lucille G. Andrews, mother of Larry Andrews '58, was a guest of the Club so she could have a few glimpses of the Institute. Present at the meeting were Mr. and Mrs. Robert D. Birkhoff '45, Scott Delicate '54, Mr. and Mrs. Howard P. Emerson '28, Mr. and Mrs. Robert Forbes '33 and son Fred, Mr. and Mrs. Hare, Stirling H. Harper '14, Allan Hoffman '53, President A. Carleton Jealous '42, Mr. and Mrs. George P. Palo '28, Mr. and Mrs. Robert R. Stephenson '51, and Mr. and Mrs. Joseph D. Stout '47. — ROBERT FORBES '33, *Secretary-Treasurer*, TVA, 704 Union Building, Knoxville, Tenn.

M.I.T. Club of the Kanawha Valley

The annual spring dinner of the Club was held at Candlelight Inn in Charleston, W. Va., on May 14, 1954. Attendance totaled 19 members and 17 ladies and our

guest of the evening, Phil Stoddard '40, Assistant Placement Office at the Institute. During the cocktail hour the annual election of officers was held. The slate proposed by the nominating committee, which consisted of past-presidents, G. B. Bradshaw, Jr., '40, J. C. Jefferds, Jr., '40, and B. T. Woodruff '36, was quickly voted into office. The following were elected: President, Thomas W. Bartram '21; Vice-president, Howard P. McJunkin '43; Secretary-Treasurer, Donn W. Barber '42; and members-at-large, Alfred E. Winslow '47 and Robert J. Sollenberger '42.

After a fine steak dinner, Phil Stoddard gave a very interesting talk which encompassed some of the problems which are being encountered in the Placement Office. He also spoke of the continued, though more selective, search for engineers by industrial concerns and expressed optimism for a high placement figure in the immediate future. Members present at the meeting were D. W. Barber '42, T. W. Bartram '21, W. Brewster '98, A. K. Doolittle, Mrs. A. K. Doolittle, R. M. Durett '29, C. H. Gilmour '31, R. D. Glenn '33, R. Gorman, Jr., '33, W. L. Hawes '22, J. C. Jefferds, Jr., '40, H. A. Kinzer '32, M. F. Means '48, C. C. Neas '47, H. O. Neukomm '53, J. C. Rhode '40, W. Q. Smith '34, R. Taggart, Jr., '49, and A. E. Winslow '47 — DONN W. BARBER '42, *Secretary-Treasurer*, 726 Grace Avenue, Charleston 2, W. Va.

M.I.T. Club of Lehigh Valley

The annual social meeting of the Club was held at Shawnee-on-Delaware on Friday, June 18. At this yearly event members and their wives attend and, after elections, the meeting is purely social. Following cocktails and a buffet dinner, a short business meeting was held at which the following were elected for the 1954-1955 term. President, John D. Briggs '42, Vice-president, George Meyers '29, Secretary, John Smyser '35, Treasurer, Malcolm Blake '25, Executive Committee Members at large, Henry Moggio, and Warren Gotherman '13, and Wilder Moffatt '38. These, together with members at large now serving Donald Blickwede '48, Stephen Muther '34, and Al Zettlemoyer '41, will make up the Executive Committee for the Club for the 1954-1955 term. Tentative plans for the fall and winter meetings involve the annual industry meeting in October when the group visits a local industry for a dinner meeting, talk and plant tour. The winter meeting is devoted, when possible, to a talk by a representative from M.I.T. The last two years we have had as guests at these meetings some of the local guidance counsellors from surrounding high schools. Interest in the Club activities has been well-sustained during the last year, and we look forward to a good 1954-1955 season. It is hoped that any Alumnus in the Allentown-Bethlehem-Easton-Palmerton-Reading area who is not regularly receiving meeting notices will contact the undersigned. — JOHN D.

BIGGS'42, *Secretary*, 131 Wall Street, Bethlehem, Pa.

M.I.T. Club of Milwaukee

A very nice meeting was held at Harold Koch's estate at Pewaukee Lake, although the number present was somewhat disappointing. There were less than 50 present. Probably the threatening weather in the morning interfered with the attendance. The following members were present: G. Y. Anderson'24, John Ballard'35, R. Greenwalt'52, D. Gross'22, F. R. Gruner'41, A. G. Hall'25, E. F. Hulbert, Jr.'36, H. W. Huston, Jr.'47, Phil Koehring'49, Harold Koch'22, C. E. Meyer'36, J. C. Monday'51, George Pollock'21, Carl W. Rahn'34, E. E. Staples'26.

A short business meeting was held and the recommendations of the Nominating Committee were accepted by the membership. John Ballard, Chairman of the Nominating Committee, recommended the following officers for the 1954-1955 season: President, E. J. Van Patten'24; Vice-president, Chester E. Meyer; Treasurer, C. L. Sollenberger, 10-44; Secretary, W. R. Bohlman'49; Directors, F. R. Gruner, G. Y. Anderson'24, P. N. Cristal'17, A. E. Jakel, 2-44, Bruno Werra'32. Elton Staples made a motion that the recommendations of the Nominating Committee be accepted. Arthur Hall seconded the motion, and the motion was carried. After the election of the officers, the meeting was adjourned. Mr. and Mrs. Harold Koch were again thanked for the use of their facilities. — CHARLES L. SOLLENBERGER, 10-44, *Secretary*, 1030 N. Marshall Street, Milwaukee, Wis.

M.I.T. Club of New York

Under the new slate of officers the Club is ready to launch another active program in the New York area. The new officers of the Club are: President, A. L. Bruneau'38; Vice-presidents, H. D. Kinsey'24, Harold F. Smiddy'20, Bernard H. Nelson'35; Secretary, M. R. McGuire'41; Treasurer, Kenneth W. Nelson, 2-44; Assistant Secretary, John E. Plantinga, 6-45; Directors to serve to 1955, G. Peter Grant'35, Dave M. Broudy'22, Frank R. Milliken'34; Directors to serve to 1956, D. F. Taylor'35, Carroll W. Boyce, 10-44, Ralph C. Wilts'41; Directors to serve to 1957, A. N. Mooradian'34, F. B. Grosselfinger'38, William Lyons'48.

The program for the coming year seems to be pretty well ironed out with the exception of the November Dinner-Meeting for which the subject and speaker have not been selected. At this writing it appears that the meeting will be devoted to either the St. Lawrence Seaway or Titanium, both subjects of much current interest. In September the first event of the year will be a beer party at Rupperts Brewery. In this congenial atmosphere Harold Smiddy has agreed to give a short talk entitled, "How To Triple Your Income In Ten Years." This is the same speech that drew so much comment when Harold presented it at the American Management Association last year. With free beer, free pretzels, and an optional dinner to follow, a large, well-attended party seems guaranteed. Andy Mooradian'34 is chairman of the party committee.

In October, through the efforts of the Long Island Group and the courtesy of Dr. Leland J. Haworth, Director of the Brookhaven National Laboratories, the Club will be shown the important work being done at Brookhaven. Henry Wehmiller is chairman of the event. Next on the schedule the Club will sponsor a Mid-Winter meeting in New York devoted to the subject of "Automation." Carroll Boyce, national affairs editor at McGraw-Hill, who has been exploring this subject for his company, has volunteered to assume the responsibility of Committee Chairman. The Silver-Stein Award Dinner will be held in April. This is the high point of the year's activities and Dave Broudy'22 will be in charge. Everyone is awaiting with expectation the announcement of the recipient of this year's award. Again as in the year before, the Club has provided a \$450 scholarship to a deserving young man from New York to start his education at Tech. We hope to see the amount grow considerably this year with the interest and membership of the Club. There is still a lot of talk about new Club headquarters and during the coming year something definite may materialize.

We ask all Alumni in the New York area to watch for the Newsletter being put out by Bill Lyons'48, announcing Club activities. — M. R. MCGUIRE'41, *Secretary*, The Cooper-Bessemer Corporation, 25 West 43rd Street, New York 36, N. Y. JOHN E. PLANTINGA, 6-45, *Assistant Secretary*, Meyer, Strong and Jones, 101 Park Avenue, New York 17, N. Y.

Niagara Falls M.I.T. Club

News of Dr. Compton's sudden death was a great shock to all of us. Club members expressed their sympathies to Mrs. Compton in a letter.

Our meeting was held at Youngstown Yacht Club on June 30, and included wives and children of our group. Fifty-seven adults turned out, plus 17 children. Everyone expressed their enthusiasm for the meeting, particularly since it included the family. A boat ride was arranged for the children along the Niagara River and out into the Lake. The film "Men of Science" and a recent Disney release, "Beaver Valley," were shown at the close of the meeting. — CHARLES B. HOLLAND'37, *Secretary*, River Road, Youngstown, N. Y.

M.I.T. Club of Northern California

About 50 Alumni, wives and children gathered under the spreading oaks of Flood Park in Menlo Park, Calif., to celebrate the annual Alumni Picnic. Among the distinctions of the day Ralph Hayden'04 proved the most mature alumnus, while William L. Reed'34 with Mrs. Reed and daughter coming all the way from Livermore were the hardest travelers. Jay Arnold'31 with Mrs. Arnold even leaving two children home brought the largest family — three children. Local Alumni will be glad to know that Henning Berg'15 was present and in apparent good shape after having a street bout with some local San Francisco hoodlums a few weeks previous. "Texas Ranger" Captain A. B. Court'10 played Bill McGuigan'42 in horseshoes, but no report was made of the results.

Courtney Keyes'75, age one year and eight days was the youngest picnicker. The local Chamber of Commerce would express their wrath, but it was a bit too cool for anyone to go swimming. We hope for better luck next year. The picnic was held on August 14, and with their wives and children the following Alumni were present: R. Hayden'04, E. J. Riley'09, A. B. Court'10, H. J. Berg'15, J. Heller'16, Fred Hewes'19, R. T. Perry'25, J. H. Arnold'31, W. Reed'34, Bert Summers'34, R. E. Keyes'40, W. McGuigan'42, T. E. Drisko, Jr., '43, and Ralph Cooper'52.

On August 20 a dozen Alumni played host to Horace Ford, honorary'91, M.I.T.'s Treasurer Emeritus and Acting Director of the Division of Defense Laboratories at lunch at the New Delmonico Restaurant in San Francisco. Mr. Ford acquainted us with the circumstances that led to the sudden passing of Dr. Karl Compton, and that although M.I.T. grieved over his loss, is proud of his achievements not only as a leader at M.I.T., but also of his contributions and service to his country. Along with Horace Ford, we were glad to welcome two visiting Alumni from Boston, namely Joe Seligman'34 and Jack Cunningham'38. Local Alumni present were: E. J. Riley'09, J. T. Nichols'22, Colin Reith'26, Gaynor Langsdorf'32 and '41, Allen Horton'36, Manuel Rapaport'36, Ray Keyes'40, Cliff Moffet'41, Chris Matthews'43, and Ralph Cooper'52.

Newcomers and old-timers are reminded that the Club meets informally for lunch every Tuesday at noon at the New Delmonico Restaurant, 328 Sutter Street, San Francisco. All Alumni are urged to attend. — CLIFF MOFFET'41, *Secretary*, 975 Indiana Street, San Francisco, Calif. RAYMOND E. KEYES'40, *Review Secretary*, 1637 Rancisco Street, Berkeley, Calif.

M.I.T. Club of Northern New Jersey

Here we are at the beginning of another year which we hope will even outdo the splendid success we had last year. However, these first notes of the new season are mostly a matter of retrospect in that our last meeting in May came after the deadline for the July issue of *The Review*. Thus, the following comprises a report of that meeting and a list of the recipients of scholarships tenable this year at the Institute.

More than 60 club members and their guests attended the "doubleheader" meeting of the Club which was held on May 24 at the Hotel Suburban in East Orange. President Glen Jackson, Jr., '27 presided at the combined annual business meeting and Spring Smoker program. The primary purpose of this business meeting, of course, was the election of next year's officers and three new members of the Board of Governors each for a three-year term. The 1954-1955 slate of the nominating committee (Newton S. Foster'28 served as chairman and the other members were listed in last month's column) was unanimously elected as follows: President, Jack F. Andrews'33; Vice-president, Russell P. Westerhoff'27; Secretary, Stuart G. Stearns'39; Treasurer, Joseph Wenick'21; and as members of the Board of Governors: Sumner Hayward'21; Chester A. Williams, Jr., '39; and Grover C. Paulsen, Jr., '40.

President Jackson then called on the chairmen of the various committees for the annual reports of their groups. Treasurer Joe Wenick reported that the Club set a record this past year in the large number of active and sustaining members (252) and that operations were substantially in the black as of this date and would show very favorably for the year. Sumner Hayward'21, Chairman of the Educational Council, reported that his group has now completed its organization (having a roster of 53 counselors) and that it has been quite active in visits to high schools as well as participation in guidance clinics.

Concerning the Scholarship Committee, Chairman Donald D. Way'19 stated that activity this year had been the highest on record in that more than 131 candidates were interviewed for the Regional Alumni Scholarship. However, final results were disappointing in that both the scholarship designee and the alternate have elected to attend other colleges to which they have won scholarships carrying larger cash awards. Robert H. Marik of Westfield, who was the Committee's first choice for the Regional Scholarship (full tuition of \$900 for the first year), accepted a Westinghouse Scholarship from Carnegie Institute of Technology amounting to \$3,100 over a four year period. Robert E. L. Turner of Montclair, the Committee's alternate choice, notified the Institute subsequent to the award that he was withdrawing. Although he gave no reasons, it is believed that he accepted a scholarship from Cornell University. Consequently, the Regional Scholarship will go unawarded this year.

However, 25 Freshman Competitive Scholarships totaling more than \$9,000 were awarded to the following named individuals: James S. Burke, Andover; Dean O. Carhoun, Scotch Plains; Richard B. Cole, Plainfield; Richard A. Craig, Bound Brook; Eric V. Denardo, East Orange; Kenneth C. Guyre, Chatham; Barry F. Hiney, Bergenfield; Roland C. Keimling, Clark; Robert J. Kwik, Belleville; John A. Love, Belleville; Mary A. McLaughlin, South Orange; James A. Margolis, Teaneck; John H. Matsinger, Red Bank; James E. Mazo, Bernardsville; James H. Miller, Jr., Hope; Robert F. Smith, Ridgewood; Winthrop W. Smith, Fair Lawn; Carl M. Steinmetz, Maplewood; Theodore R. Touw, Paterson; John F. Wagner, East Orange; Richard B. Wattson, Rutherford; Walter W. Weick, West New York; George F. Wieland, New Brunswick; Richard A. Wilson, Berkeley Heights; and Ronald F. Rivers, Hamilton.

The 10 scholarship candidates who received Honorable Mention are Norbert A. Hulsman, New Brunswick; Fred D. Kobylarz, Passaic; Elspeth B. Leslie, Hackensack; John B. McCloskey, Newark; Frederick J. Page, West Orange; Richard A. Rosenthal, Newark; Aviva J. Rubin, Hillsdale; Martin E. Weber, Short Hills; John W. Wesner, Jr., Berkeley Heights; and Roger D. Wollstadt, Maplewood.

H. D. Macdonald'22, Chairman of the Placement Committee, reported that there are more men seeking jobs than jobs seeking men. This is the reverse of last year's experience. President Jackson concluded the business meeting by introducing Presi-

dent-elect Andrews'33 who in turn introduced his classmate John R. Wiley'33, the speaker of the evening. Mr. Wiley, Deputy Director of Aviation, Port of New York Authority, spoke on the topic "Newark Airport: A Challenge to the Engineer" and illustrated his talk with two motion pictures. He traced the growth of Newark Airport from the original survey report in 1927 for an airport to serve the greater New York area to its present status as part of the Port Authority's air facilities.

Our usual and popular social hour enhanced with a bountiful table of sandwiches, beer, soft drinks, pretzels and other trimmings wound up the festivities for the evening and marked finis to the Club's activities for the 1953-1954 season.

Your Assistant Secretary would like to take this opportunity to thank all those who have been of assistance to him in gathering and writing these notes during the past half-year when he filled in for Warren King'48 who was transferred by his firm to Chicago. My very best wishes that all of you have had a most enjoyable summer. — RUSSELL P. WESTERHOFF'27, Secretary, 823 East 23rd Street, Paterson, N. J. JOHN T. REID'48, Assistant Secretary, 80 Renshaw Avenue, East Orange, N. J.

M.I.T. Club of Sao Paulo

The Club held a meeting at the English Club (São Paulo Athletic Club) on June 24. The first subject of the meeting was the resignation of President R. L. Moody'34, which was accepted with regret by all members present. A motion was proposed by J. H. Schipper'37 and approved by the members present, establishing a committee to recommend amendments on Article IV of the Constitution on vacancy of officers and to make nominations for elections or any other recommendations. It was decided that the committee be formed by the members present at the meeting. Committee recommendations were as follows: (1) Amendment on Article IV of the Constitution: If any vacancy of office occurs election should be held for that vacancy unless the unexpired term of the vacant office is less than six months, in which case the executive committee will perform the corresponding functions. Any of the members in good standing, including officers, are eligible. (2) The Committee further recommended that the election concerning the present case be held according to the proposed amendment. (3) Before being dissolved, the Committee made the following nominations for the election of officers: President — Victor F. B. de Mello, 6-46; Vice-president — Allen G. Velho'39.

Werner O. Bachli'33, of the Activities Committee, made several suggestions of the type of activities the club members would like to engage in and proposed that the members present make a brief description of their professional activities and hobbies. This was done. Members present at the meeting included: Jorge H. Jonston'32, Werner O. Bachli'33, James H. Schipper'37, Allen G. Velho'39, Oswaldo F. F. Torres'45, Paulo Almeida Fagundes, 2-46, Victor F. B. de Mello, 6-46, Paulo F. B. de Mello'47, Rogerio N. da Silva Rego'47, Eduardo Prado, Jr.'50, and Heniz Gunther'52. — ROGERIO N. DA SILVA REGO'47, Secretary, 376 Rue São Carlos do Pinhal, São Paulo, Brazil, S.A.

M.I.T. Club of South Florida

A dinner meeting was held in the Old Scandia Restaurant in Opa-locka on the evening of June 23. The recent death of Dr. Compton was noted with appropriate remarks by the members relative to his friendly personality as well as his attainments in scientific and scholastic fields. As stated in the report of the April meeting, Dr. Compton had promised to meet with the Club next December, and there was considerable discussion as to the possibility of securing some prominent Alumnus to take his place. Brigadier General W. G. Manley'23, the new commandant of the Marine Air Base at Opa-Locka, who was welcomed as a new member of the Club, said that he might be able to get General Doolittle to do so. President Symonds suggested that the Club should plan to send a representative each year to the Institute on Alumni Day, to make personal contacts with members of the Faculty and prominent Alumni, and thus increase interest in the Club and boost membership. Members and guests at the meeting included Charles S. Symonds'35, President, and Mrs. Symonds; Fred E. Mason'29, Vice-president, and Mrs. Mason; Don Whitmore'51, Secretary, and Mrs. Whitmore; Bill Sussman'40, Treasurer, and Mrs. Sussman; Kenneth P. Armstrong'10; Morris N. Lipp'20; Edward I. Mandell'21, and Mrs. Mandell; Lloyd J. Porter'24; R. L. O'Donovan'27, and Mrs. O'Donovan; Brigadier General W. G. Manley'33; Meyer A. Baskin'34, and Mrs. Baskin. — DONALD S. WHITMORE'51, Secretary, 2191 S.W. 11th Street, Miami, Fla. KENNETH P. ARMSTRONG'10, Publicity Committee, 1240 Sesame Avenue, Opa-locka, Fla.

M.I.T. Club of Southern California

An interesting letter came from Michael Kenyon, recipient of the first Holmes and Narver Scholarship to M.I.T. He said the other scholarship winner is Gary Blakely of Ventura and that Terry Gildea of Glendale Hoover High also received a scholarship. The representation of Southern California at Tech will be unusually good and we are expecting to hear of a branch of this club being established in Cambridge.

The Hollywood *Citizen News* front page featured a picture of William V. Roberts'12 as "Good Citizen" with a list of his various public activities, including presidency of the Miracle Mile Kiwanis and founder of the Toastmasters Club. Various recent papers have told of the proposed opening of Mulholland Highway on the ridge of the mountains between Hollywood and the Valley to relieve other highways. The road projected in 1926 will be straightened reducing the 22 miles to 16. The engineer in charge is Tom Rice'13. The Alfred Sloan Fellowship from this area is J. Frank Tobias of the Hycon Manufacturing Company of Pasadena, of which Alden Acker'37 is general manager. The California magazine, *Fortnight*, of August 18 contains a most illuminating article on Pasadena School Boards tranquility which has been interrupted by Herbert J. Mann'06 calling attention of the taxpayers to the fact that the school buildings erected in the past 10 years have cost about 42 per cent too much. Mr. Mann has been speak-

ing over NBC Sunday mornings for some years on building — on KFI at 10:00 A.M. M.I.T. is again honored by the selection of Philip K. Bates'24 as national president of the Institute of Food Technologists.

The Correspondent wishes to rectify an error made in the recent election in which he favored Joe Holt from this part of Hollywood. Letters went out to Tech men on the old M.I.T. Club letterheads. This Scotch idea has been scotched due to the vigilance of President MacCallum.

The trip through McCollough Motors on May 20 was one of the best in the fine series planned by Program Chairman Robert E. Hillyer'31. This company started in 1938 is now one of the largest in this area. In 1944 chain saws with self-contained gasoline motor were added and by working in the field with the operators and standing back of the reliability of the product the weight has been reduced and the sales mushroomed out of all anticipations. This meeting was especially a family night. Bernard S. Coleman'19 brought his two sons, Bryant Essick'22, F. W. Grant-ham'25 and P. E. Golsan, Jr., '34 were each accompanied by future M.I.T. students and many of the wives enjoyed the trip through the factory. Among those present were: Hiram E. Beebe'10, Robert S. Breyer'10, William Schmiededeke'12, R. M. Kallejian'16, Frank N. Cram'17, Albert S. Coleman'19, Sam Lunden'21, Bryant Es-sick'22, Philip K. Bates'24, Marcus A. Mc-Clure'22, Phil Hereford'24, Philip Herrick'24, F. W. Grantham'25, H. W. Geyer'26, B. A. Gillies'27, George N. Mangurian'28, J. J. Dysart'33, Jim Kendrick'34, Robert H. Boden'34, Page E. Golsan, Jr., '34, R. S. De Wolfe'36, Frank E. Carney'37, Howard E. Britton'38, James S. Cullison'41, Stan-ley L. Wallace'44, W. R. Niedhamer'45, Francis N. Kurriss, 2-46, Helmar Schlein'47, W. Bruce Gist'48, J. B. Dingle'48, W. J. Oakes, Jr., '49, K. J. Rogers'50, A. J. Ro-mano'50, Richard S. Fanatt'50, David A. Kemper'51, Clifford Y. K. Kam'52, James N. Wilson'52, Forbes E. Forbes'52. — **HIRAM E. BEEBE'10, Review Secretary,** 1847 North Wilcox Avenue, Hollywood 28, Calif.

M.I.T. Club of Taiwan

The 1954 summer meeting of the Club was held at the Assembly Hall of the Bank of Taiwan on the evening of July 29, Pres-ent were 31 Alumni and six wives. The meeting opened with a brief business meeting following which a buffet supper was served. The main feature of the meet-ing consisted of a showing of the M.I.T. film "Men of Science" which was sent from Cambridge especially for the meeting, and which proved particularly interesting to those who have not had the opportunity to visit M.I.T. during recent years. Many of our members have not made the 12,000 mile trip since studying at the Institute. Also shown were a number of short reels on various subjects of interest and enter-tainment which were obtained for the meeting by the Secretary. The Club is deeply appreciative of the prompt re-sponse from the Alumni Association. The film was received within 10 days after the request was mailed from Taipei. — **H. T. Lwu'37, Secretary,** Lane 44, Ching Meng Street, Taipei, Taiwan.

M.I.T. Club of Washington

At a stag party held at the Potomac Boat Club on June 24 the second oldest M.I.T. Alumni Club elected and installed the following officers to serve for the year 1954-55: President, William R. Ahrendt'41; Vice-president, Charles J. Roggi'29; Secretary, Sterling H. Ivison, Jr., '41; Re-view Secretary, Andrew F. Hillhouse'43; Treasurer, Joseph Y. Houghton'26; Execu-tive Committee, N. P. Stathis'29; Charles S. Butts'41; M. E. Taylor'42; Charles H. McDonnell'48; Tan C. Lu, 2-44; R. K. Thulman'22.

No club meetings were held during the summer months. However, William Ahrendt called three meetings of the Exe-cutive Committee during this period to plan and arrange an outstanding club pro-gram for this year. He also presented an M.I.T. plaque to the Engineers' Club at their July 27 luncheon meeting in ap-preciation for services provided to the M.I.T. Club. The first meeting of the Club for the new year was held on September 28 at the Potomac Boat Club. A stag meeting of this nature has always been very popular and is held at least once a year featuring buffet supper, beer, soft drinks, entertain-ment, and an informal speech by a guest of prominence in the local sports world.

Through the co-operation of David Guy'12, manager of the Cosmos Club, Vice-president Roggi arranged for the Club to hold all of its dinner meetings this year at the new palatial quarters of the Cosmos Club at 2121 Massachusetts Av-enue, former home of Assistant Secretary of State Sumner Wells. Each dinner meet-ing will feature a prominent and timely speaker of particular interest to M.I.T. Alumni. Meetings are scheduled for No-vember 4, January 27, March 22 and May 24. The March 24 meeting will be a re-vival of our former popular custom of Ladies' Night, in honor of our wives, and will feature a prominent lady speaker.

Nicholas Stathis, club president last year, is chairman of the new Membership Committee and has started a program to assure that each of the nearly 1,400 Alumni in the Washington area is invited and is given an opportunity to attend and participate in the Club's stimulating pro-grams. This will also afford an opportunity to renew old and to create new friend-ships, woven around our common interests as M.I.T. Alumni. — **Commander STER-LING H. IVISON, JR., '41, Secretary,** Bureau of Aeronautics, Navy Department, Wash-ington, D. C. **ANDREW F. HILLHOUSE'43, Review Secretary,** Solar Aircraft Company, Cafritz Building, Washington, D. C.

CLASS NOTES

• 1887 •

Henry F. Hill, one time city engineer of Augusta, Me., passed away May 11 at the age of 91. His early engineering service was in connection with several western railroads. From 1898 to 1904 he worked on fort and river projects with the United States Army Engineer Corps. For 40 years, beginning about 1907, he con-ducted a private engineering business in

his native City of Augusta. He was a life member of the American Society of Civil Engineers. His wife, several children and grandchildren survive him.

Ralph E. Curtis of Danvers, Mass., passed away of cerebral hemorrhage on June 2, 1954. He had been in failing health for a year or more, but was con-fined to his bed for only a few weeks. The 1887 class notes published in The Tech-nology Review of November, 1953, con-tain the following:

"Ralph E. Curtis of West Roxbury was one of the youngest members of the Class of 1887. He is now living at 35 School Street, Danvers, Mass. He has two daughters, one of whom is a nurse, the other a school teacher, a married son, Lawrence, who is in accounting and lives in Squantum. Ralph Curtis was for 19 years in the designing department of the Boston Edison Company, and was later active in purchasing and accounting. He had much to do with the construction of the Everett Refining Plant when it was first built. Later he was associated with the New England Fuel Company. He holds a much prized award for 65 years of service from the mechanical engineers. He and Mrs. Curtis, who passed away more than a year ago, had always been in-terested in civic affairs and they were both staunch supporters of the Congrega-tional Church."

John L. Bixby died at his home, 65 Hillside Avenue, Arlington, Mass., on October 20, 1953 after a short illness. He was self-employed as a mechanical and heating engineer, until 1939, when he be-came associated with Barkley and Dexter, Inc., of Boston as a designer of production machinery. Mr. Bixby retired in 1947 at the age of 81. He leaves his daughter, Mrs. Katherine Bixby Marshall of Arling-ton, a son, Colonel Harold O. Bixby, U.S. Army Retired, six grandchildren, and five great grandchildren.

Oscar Nutter of the Vita Needle Com-pany, Needham, Mass., is at his summer home at Pocasset. His communication contains the interesting statement, "A few days since, we were here all together, children, grandchildren, and great grand-children, 20 in all, a still unbroken family circle." Our Class President, Richard E. Schmidt, longtime prominent architect of Chicago, is still active. A newspaper pic-ture shows him with various church dig-nitaries at the blessing on August 1, of the million and a half dollar nurses' home and school of the Alexian Brothers. This is reminiscent of the fact that he also de-signed their hospital back in 1896.

Your Class Scribe is spending his 90th summer, comfortably, at his home in Chicopee Falls, Mass., with occasional week end trips to the seashore with his daugh-ter and son-in-law. — **N. P. AMES CARTER, Secretary,** 22 Grove Avenue, Chicopee Falls, Mass.

• 1890 •

Greenlaw, Tilson and Packard repre-sented the Class at the annual reunion luncheon in June, 1954. While no one is exactly 100 percent well physically, there was some discussion of plans for our 65th anniversary and it was agreed that our celebration should be at an easily acces-sible Boston hotel, and that probably a

preliminary letter asking for suggestions might be sent to class members late this fall. Packard was the only '90 man at the dinner that night.

Harry B. Burley, Sr., passed away on August 22. For many years his health had not been good and as far back as 1944 his doctor had prevailed on him to give up his duties as our representative on the M.I.T. Alumni Council. Nevertheless he continued to be one of the most faithful attendants at our reunions, and our 1953 lunch was his first outdoor effort after a long period in the hospital. He had a broader foundation than some of us, having spent two years or more at Dartmouth before coming to Tech. His first job was as city engineer of Nashua, N. H., but in 1893 he joined the Factory Mutual Insurance Company of Boston and for 12 years served as factory inspector all over the country. Then in 1906 he became president and treasurer of the Boston Insulated Wire and Cable Company and pioneered in the manufacture of special wires and cables. Later he formed a similar company for operation in Canada. He told us in 1945 that the German "bulge" during World War II kept him hustling nights and Sundays at both plants for airplane wire and cable and special alloys. He had been a director of the Dorchester Savings Bank, charter member of the Chamber of Commerce, and served the National Association of Manufacturers on a committee on the Relations of Government to Industry. Sherman, Kendall and Lenfest have all reported on his cordial relations with neighbors of his ancestral farm at Epping, N. H. He is survived by his wife and three sons. — GEORGE A. PACKARD, *Secretary*, 25 Avon Street, Wakefield, Mass. FRANK M. GREENLAW, *Assistant Secretary*, 36 Bull Street, Newport, R. I.

• 1891 •

Harry Young wrote me early in April stating that Frank Howard was not in good shape as he had spent a lot of time in the hospital and that they sent him home with three nurses. In the middle of the month Frank called me up and seemed quite cheerful but stated he was not in condition to do much work for the Class. Harry Young invited me to take over Frank's job as assistant secretary and I accepted. So I have a new job and will try to keep our classmates informed as to such class news as I can collect. In order to do this I wish you would all take the time to write me a short letter with special reference to your health and your present activities. I cannot broadcast class news unless I can get the data from all of you.

It appears that our President, Harry, is the busiest man in the Class today. He is still the active head of the J. L. Hammett Company with which he has been connected for nearly 60 years. Last year he had the responsibility of building a new factory in New Jersey, and quite lately he lost by death his vice-president, Howard H. Tucker, who died in Newton after having been connected with the Hammett Company for 52 years. Harry has a very difficult and absorbing job as the head of this successful and growing business and does not appear to have lost any of the vim and vigor which he has

shown in his long association with the business. In spite of his business cares he maintains a keen interest in our Class and represents it in committees, including that for arranging the yearly donations to M.I.T. He arranges our yearly dinners at the Country Club and in general makes an ideal class president.

Robert Ball writes from Cambridge, England, May 25, in answer to a letter of mine: "My health (in a good hour be it spoken) is good. Like you, the brake is applied more or less, but the garden takes up the lion's share of what energy is left in muscle while the brain works throughout the whole day on all sorts of desultory thoughts good and bad and the results are noted (and commented on). Generally failing memory makes the comments direct and explicit and often are accompanied by help over a style where it is much needed. Curiously enough events in my Boston days appear with greater clarity than those of recent origin. But this is common in old age, I believe. However, taking it by and large, life is still well worth the effort, and I trust it is the same with you.

"We are two alone with help; and our daughter is among the Mau Mau in Kenya, though she and her husband and son are not in any danger from the roving gangs of the Aberdares. My grandson is at school in England and flies back to Kenya for the holidays where his mother lives with her husband (she is the widow of my son who was killed in the war and has married again a prosperous farmer and ranger in the fertile land). The climate is perfection, and our Queen has just opened the greatest water-power installation in the world through which the outpouring of the water of Victoria Nyanza pass. (This lake would in area cover the whole of Ireland with something to spare.) I am writing to Harry Young in time for your class dinner. I am sorry not to be present."

The annual dinner of the Class was held on Saturday, June 12, at the Country Club in Brookline. There was an unusually large attendance of 15 in addition to our Honorary Member, Horace Ford, and to Walter Douglass' son. The members present were Messrs. Brown, Bunker, Cole, Dana, Damon, Douglass, Earl, Howard, Moore, Pierce, Read, Tappan, Walker, Warren, Young. In 1952, there were only 10 present, while in 1953 there were 14. We must be growing younger if we can show an increase like this in three years.

Harry Young presided with his usual efficiency, and he read letters from a few who could not be with us. He introduced Horace Ford who gave a brief talk on conditions at M.I.T. showing that in spite of its great size and complexity it was still giving students the personal attention that they needed. Gorham Dana gave a short talk on the old taverns of Brookline showing that they had all been situated on thoroughfares still in use for heavy traffic and all entering Boston by way of Brookline Village, which at one time was called Punch Bowl Village (named after the famous Punch Bowl Tavern). We were glad that Frank Howard was well enough to be present and give us a few reminiscences. Clouston Moore won the long distance honors, coming all the way from Michigan. Joe Warren was second,

having journeyed from Cumberland Mills, Me., where he is still active in his famous paper mill.

It is needless to say that the food and drinks were all excellent, and we adjourned about four o'clock greatly stimulated by the drinks and the congenial companionship.

We learned of the recent death of Lewis Dunham, a short account of his life being recorded here.

Lewis A. Dunham was a famous and successful mining engineer. Born in Wisconsin, his headquarters were usually in New York City. After graduating from M.I.T. he spent several years with the American Smelting and Refining Company examining mines in Arizona and Colorado. He developed the magnetic separation of zinc-lead ores that was used in the Yak mill at Leadville, Colorado. Later he joined the Lewisohn interests investigating several mining properties. Afterwards he was associated with Colonel Seelye W. Mudd and Marcus Daly in mining projects that were later taken over by the Anaconda Copper Company. His work took him into all the western states, British Columbia, Eastern Canada, Mexico, and Spanish America. He was for several years with the York Metal and Alloys Company, making investigations in vanadium, tungsten, and molybdenum. Since 1926 he had been occupied in financial and mining investigations with a number of brass and tube manufacturing companies. From 1928 to 1933 he was with Hayden, Stone & Company where his office was at 25 Broad Street, N. Y. Since 1932 he had been a director of the Grandby Consolidated Mining, Smelting, and Power Company. He spoke French and Spanish and had a wide acquaintance among men in the mining, chemical and allied industries. He was a former member of the American Institute of Mining and Metallurgical Engineers and of the American Society of Civil Engineers. His record as a mining engineer was outstanding.

Many of our classmates will keenly regret the death of Dr. Karl Compton, who died recently of a heart attack at the untimely age of 66. He was unusually close to our Class. He accepted with pleasure an invitation to one of our class dinners and was the life of the party. Barney Capen was there in a wheel chair, and as was his custom, he asked Dr. Compton to register in his birthday book. When the proper date arrived, Barney sent him a card of congratulations. I was on the Alumni Council at that time and saw Dr. Compton later a little. He wanted to know Barney's address, saying he was much pleased at hearing from him on his birthday. I told him he was in a convalescent home in Cohasset. He said that he would be glad to call on him some day. This was an unusually kind thought from such a busy man. Both Dr. Compton and his wife honored us by their company at our 50th anniversary banquet at the New Ocean House at Swampscott. — GORHAM DANA, *Assistant Secretary*, 44 Edge Hill Road, Brookline, Mass.

• 1892 •

Four members of the Class attended the luncheon on last Alumni Day: Carlsson, Burnham, Ober and the Secretary,

and listened to the very interesting program presented, which was published in the last issue of *The Review* in July. None of our members were able to attend the banquet in the evening. Carlson was able to attend the memorial service for Dr. Compton held in the Great Court on June 25.

The Secretary received a notice of the death of Edward F. Glover at his home on Claremont Street, Rockland, Me. Glover attended with us in Course IV but the Secretary has no knowledge of his career except that he had been retired for some time at his home in Rockland.

In connection with his job with the Water, Sewer and Electric Utilities in Wellesley, the Secretary has had his hands full the past two weeks in connection with repairs which he is glad to report have progressed at a rapid rate. Hundreds of trees were broken down or uprooted with great damage to electric and telephone circuits. At the present writing service has been practically restored although a large amount of work cleaning up after the damage is still to be done. — CHARLES E. FULLER, *Secretary*, Box 144, Wellesley 81, Mass.

• 1893 •

The Class of 1893 had a very pleasant reunion at the Faculty Club in Cambridge on Alumni Day, June 14, 1954. We met at 12 o'clock for cocktails, followed by an excellent luncheon. Both were enjoyed by those present. Those attending were: Clarence E. Fuller, George B. Glidden, Harry M. Latham, Edmund I. Leeds, Edward Page, Edward S. Page, Cecil E. Paine, Arthur S. Pevear, Leo W. Pickert and John F. Tomfohrde. John H. Tomfohrde²⁹, attended with his father. A short business meeting, conducted by President Page, followed the luncheon. At that time the hope was expressed for a larger attendance at our reunion in 1955. We trust all class members received President Page's letter of June 30, with a copy of the minutes of the June 14 meeting. We all enjoyed the auction of a photograph of the Class which was taken on the steps of the Rogers Building at the time of graduation. The auctioneer was Leo Pickert, who kept the bidding lively, to the amusement of his classmates.

We have been advised of new addresses for the following: Joshua B. Blair, 3808 South Hope Street, Los Angeles 37, Calif.; John C. Hawley, 2268 Wayne Avenue, East Gary, Ind.

We regret to report the deaths of the following members of our Class: Maurice B. Biscoe, December 29, 1953; James C. Boyd, January 18, 1954. We do not have any further information about Maurice Biscoe and James Boyd.

We received a letter from Mr. Eugene B. Wadsworth, in June, advising that his father, Dr. Augustus B. Wadsworth of Manchester, Vt., died at the home of his daughter, Caroline D. Wadsworth, in New York City. In addition to his daughter, he is survived by two sons, Eugene D., of New York, and Augustus, Jr., of Pittsburgh.

Isaiah C. Hanscom, a naval architect, formerly of Boston, died in Somerville, N. J. on June 30. He had lived in Pluckemin, N. J. for the past six years. He is sur-

vived by his son, Clarence D. Hanscom '18, of Pluckemin, who notified us of the death of his father. — GERTRUDE B. CURRIE, *Acting Secretary*, Fay, Spofford and Thorndike, 11 Beacon Street, Boston, Mass.

• 1894 •

Of course the first mention in these notes should be of the 60th anniversary reunion of our graduation. Notices had been sent to all members of the Class believed to be living, whether they were actually graduated or had been connected with the Class for briefer periods, as was very common in our early days. As a committee on reunion the Secretary was nobly assisted by George Owen and Harry Warren. In view of the fact that we are now past the age for great participation in sports, it was deemed desirable to have a reunion which did not involve great physical activity and to confine it to Saturday, June 12, with a glimpse of present day M.I.T., a luncheon at Walker Memorial, and a sight-seeing trip on the Charles River Basin.

The reunion began at 10 o'clock, a rendezvous in the present Rogers Building. It was a new experience for some to look across Massachusetts Avenue and see the new auditorium in process of construction, the broad playing field flanked by the Rockwell Cage and field house, and the dormitories, with the numerous houses for married students (Westgate) at the far end. Also it was new to nearly all to see the new Dorrance Building in which are the departments of Biology and Food Technology, the laboratories of the latter named in honor of your Secretary.

At the luncheon at Walker were the following: Dr. and Mrs. C. G. Abbot from Washington; C. B. Beach and Mrs. Beach from Rockport; H. F. Copeland, New York; H. A. Crary and Mrs. Crary, Warren, Pa.; T. Horton and Mrs. Horton, Sandwich; E. M. Hunt, Mrs. Hunt and their daughter, Portland; E. S. Jenckes, Wyonissing, Pa.; J. H. Kimball and daughter, New Britain, Conn.; H. O. Lacount, Somerville; Professor Emeritus George Owen, Newton; G. W. Sherman, Akron, Ohio; Mrs. Albert B. Tenney, Lexington; Henry E. Warren, Ashland; and S. C. Prescott and Mrs. Prescott, Cambridge. During an excellent luncheon, messages of regret were read from A. J. Farnsworth, H. E. Johnson, F. M. Mann, J. C. Nowell, and A. Sperry all now Californians; W. V. Brown, Florida; J. E. Wray, Missouri; J. C. Kimberly, Wisconsin; J. P. Story, Jr., Washington; Mrs. Sarah A. (Hall) Bonesteele, Chicago; J. W. Kittredge, Ohio; Mrs. W. H. King and A. W. Tidd, New York, and H. W. Gardner, T. G. Richards, F. A. Schiertz, and A. A. Shurcliff, Massachusetts. The Secretary also displayed the first copies of his book, *When M.I.T. Was Boston Tech* specially sent by air from New York for this occasion.

Negative reply cards had also been received from H. M. Chase, L. Dana, F. C. Baker, E. I. Neawell, J. M. Holder, F. H. Clarke, A. G. Keith, and Miss Susan Peabody.

The necrology of the previous five year period was read. The Secretary reported that 34 or almost 40 percent of the '94

graduates were still living, as were also 28 of the many non-graduates on the class list. The deaths of 16 graduates and 12 non-graduate members of the Class have been reported since our 55th reunion in 1949.

Following the luncheon came the trip on the river admirably arranged by George Owen, and utilizing the launches belonging to the Sailing Pavilion. Embarking here, we passed the Walker Memorial and the President's House, and proceeded downstream as far as the new Museum of Science at the lower end of the Basin, thence upstream along the south shore, and through the lagoons, thus showing the new developments in landscaping and highway layout of which our Arthur Shurcliff (Shurtleff to us) had been the chief landscape engineer, past the new building of Boston University and so on beyond the Harvard Business School, the Harvard Stadium and the boat houses, and well up to Watertown. On the return along the north bank we passed numerous new installations and in the last mile the Technology crew building, new wind-tunnel, and the dormitories, and the village of houses for married students, and finally the great buildings of the Institute itself; and debarked at the Sailing Pavilion. This gave a good survey of "Research Row" as the many institutional research establishments along the River are sometimes called.

At the Sailing Pavilion we parted regretfully with those who had to leave for trains or for other pressing engagements. The others inspected the many dinghies and other sailing equipment used by students and staff, and later proceeded to the Faculty Club where dinner was to be served. Here we were happily joined by N. S. Bean and Mrs. Bean who could not be present at the luncheon as Bean had to run an important banker's convention at Portsmouth during the morning and early afternoon. Our dinner party was small but very enjoyable, and so officially ended '94's 60th. Several of the Class were present at the fine Alumni Day Meeting and Luncheon, and Bean, Copeland, Hunt and Prescott were at the Alumni Dinner at the Statler in the evening.

Your Secretary and his wife have recently made a brief visit to Los Angeles, flying non-stop each way via New York, to attend the National Convention of the Institute of Food Technologists at which P. K. Bates²⁴ was installed as the new president. This organization was founded at M.I.T. in 1939, and your Secretary was regarded as its daddy and was the first president. It is now a strong international professional society and has over 4,000 members. B. E. Procter²³, Head of the Department of Food Technology at M.I.T. and C. N. Frey a special lecturer here have also been presidents and have brought high repute to M.I.T. activity in this field.

Volume 7 of the *Annals of the Astrophysical Observatory of the Smithsonian Institution* pays its honors to Dr. Charles Greeley Abbot, its director, 1907-1944, and secretary of the Smithsonian Institution from 1928 to 1944. A fine portrait of Abbot faces the title page. The preface is a tribute to his work as director, and his later work as research associate. In an appendix are listed his papers since 1931.

His publications during his whole period of activity from 1895 to the present time run into hundreds of titles.

There are also sad items that must be reported. A letter from Narciso T. Quevedo, Jr., of Guatemala City brought the information that his father died in San Antonio, Texas, in 1950. Quevedo returned to Guatemala after graduation and for several years was engaged in engineering and the importation of machinery. About 1905 he became instructor in Spanish and History at the U. S. Military Academy at West Point, and remained there 12 years. He later became a member of an engineering firm in San Antonio, apparently with a branch office in Guatemala City. Quevedo's son was educated in the United States and served in the U. S. forces in France in World War I. This is the first information received about our classmate since 1937.

We are saddened also as we report the death on July 25 of Harry Wentworth Gardner, Emeritus Professor of Architecture. Gardner was born in Dover, N. H., Jan. 8, 1873, graduated from the Boston English High School in 1890 and entered the Institute in that year. After graduation in '94 he was for a year draughtsman in the architectural office of Longfellow, Alden and Harlow in Boston, then became in 1895 instructor in Architecture at M.I.T. He was a most successful teacher, and introduced modeling into the course to give students a three-dimensional view of their projects. In 1899-1900 he held the Austin Fellowship and spent a year in study in Europe. He was made assistant professor in 1903, and in that year brilliantly conducted a foreign summer school for a group of M.I.T. students in Italy, France and England. He became associate professor in 1909. In 1915 he was sent to Europe to look into the possibilities of securing a successor to Professor Despradelle whose death had terminated his Great Beaux Arts influence on the Department. In 1920 Gardner was made professor of architectural design and so continued until his retirement in 1943. In that year the travelling fellowship for awards for high professional merit was renamed "The Harry Wentworth Gardner Travelling Fellowship in Architecture, for the man who had given all his professional life to teaching, and who had left such a deep impression on so many architects in America because of his teaching and devotion to his work." In the year following his official retirement he was a lecturer and had general direction of graduate students in the department. He was a fellow of the American Institute of Architects and for many years active in the Boston Society of Architects. Many will remember his wonderfully effective decorations in Symphony Hall at the great reunions, and for other evidences of his skill and superb taste. In 1906 he married Miss Celia Brophy, who survives him. They had two sons, John Wentworth '33, and Richard, now a resident of Long Beach, Cal. The cordial sympathy of the Class is extended to them.

That these notes may end on a happy key, it is a pleasure to record that C. G. Abbot brought to our reunion a very charming and lovely bride who instantly won the approval and high regard of all

present. It is also a pleasure to report that at the commencement exercises of St. Auselm College at Manchester, N. H. in June, our classmate Norwin S. Bean was awarded the honorary degree of doctor of laws, in recognition of his business, civic and charitable services, so the community congratulations, Brother Bean. A leader in New Hampshire banking circles, Norrie (as he is to us) is chairman of the board of the Manchester National Bank and treasurer of the Manchester Savings Bank, president of the Manchester Gas Company, and of Amoskeag Industries, Inc., and a director of the New Hampshire Fire Insurance Company. He and Mrs. Bean have long been associated with various local charities, and he has been active with electric utility affairs for more than 50 years, altogether a remarkable and splendid record. — SAMUEL C. Prescott, Secretary, Room 16-317, M.I.T., Cambridge, Mass.

• 1895 •

The 60th Reunion of our Class could be held next June, 1955, if enough members would be able and interested. The great majority of five-year enthusiasts have passed on, and most of the remaining living mates have never attended such a reunion. Your Secretary feels the responsibility to give you the following record to justify his belief that our five year reunions are a thing of the past. The total living membership of the Class is now 58; 37 graduates and 21 affiliates. In 1895 our Class graduated 144 and now we can muster from that number only 37 or 25.6 per cent, and of this number Massachusetts has 17; California and New York each 5; Pennsylvania 3; and one each in the states of Connecticut, Illinois, Michigan, New Hampshire, New Jersey, Rhode Island, and Virginia. An informal meeting could be held at next Alumni Day Luncheon at Tech, and if interested tell your Secretary. The June Alumni Dinner at the Statler was attended by only one faithful from '95, Samuel P. Hunt of Manchester, N. H.

Last August the Yoders took a trek around Cape Cod and while passing through Chatham called on George and Mrs. Cutter at their delightful home, "Riding Lights," where we spent several hours reminiscing. George spends his summers at Chatham; both he and Mrs. Cutter are well. We also called on Mrs. John H. Gregory who is summering with her son, Richard, at Harwichport.

Charles W. Bigelow, Course II, lives at 23 Elm Street, Brookline, Mass. George G. Greene, Course II, moved to 1709 Haywood Road, Hendersonville, N. C., Frederick W. Harris, Course XI, is now at 43 Prospect Place, No. Plainfield, N. J. We are advised that Stephen H. Plum, 2nd, passed on last February 17. No further details. He was with our Class in Course VIII during 1891-1892.—LUTHER K. YODER, Secretary, 69 Pleasant Street, Ayer, Mass.

• 1896 •

Your Secretaries extend greetings to all the Class and trust that your vacation period added satisfaction in the accomplishment of your chosen diversions as well as physical fortitude to carry us into another academic year. On Alumni Day,

June 14, those present at the luncheon were: Damon, Davis, Driscoll, Gates, Hedge, Pierce, Rockwell, Smetters, Spahr. The room reserved at the Statler for the late afternoon reunion was well chosen and we had the pleasure of greeting Davis, Damon, Driscoll, Pauly, Rockwell, Smetters and Albert H. Spahr, who was attending his first reunion since graduation. Lythgoe expressed regrets at not being present because of illness at home. During the summer we have received from some of these classmates some thumbnail sketches which we are pleased to pass on to you (in part).

Albert Spahr writes, "After retiring from the practice of architecture in 1927, I moved to a farm in the Berkshires which I had acquired with the intention of living there permanently. During World War II, I started farming with one cow. At present I have a herd of 45 registered Guernseys and Holsteins. Some of you will naturally ask the question, "Can you make farming pay?" The answer is, "Not in money, but in health and contentment and a good way of life." My seven grandchildren and six great grandchildren all love the farm and spend a great deal of time with me. They are a great joy, especially since the death of my wife in 1952. If any of the Class are in my neighborhood I should be delighted to have them stop to see me. Fairbrook Farm, North Egremont, Mass."

Henry Hedge writes: "From June until after Labor Day, I shall be in Plymouth, Mass. Principal occupation for that period—using my motor boat (24 feet long) fishing for mackerel and "stripers." Some golf, bridge, and resting on the beach. I hope to call you up some day and get you and Damon to join me." The following is from the Massachusetts Bay Yachtsman. "Known around Plymouth as the 'Mackerel King' Henry Hedge and his neat cruiser *Snark II* are a familiar sight in and around the harbor. Fair or foul weather fails to deter Hedge from his daily trips and when he returns to the club dock he usually displays a sizable catch of mackerel, and often has numerous striped bass. Skipper Hedge's devotion to the sport is an inspiration to all and it is the unanimous feeling that he represents all the best of the traditions of the Plymouth Yacht Club."

James Driscoll, July 1, 1954. He also spends some time in Plymouth. He said "I saw Henry Hedge at the Yacht Club going out fishing in his power boat." Driscoll is still chairman of the rent board for Brookline, Mass., and does a little probate work. Hattie Gates writes from the Hotel Alpine, North Woodstock, N. H., where she has spent the month of July for the past six years. January, February and March she is in Florida, otherwise at her apartment 6 Orkney Road, Brookline, Mass. Hermann Lythgoe recently celebrated his 80th birthday. The event was marked with a family dinner at the home of his brother. After graduating from M.I.T. he went with the department of public health as associate chemist. He worked his way up the ranks until his appointment as director of the food and drug division in 1915, where he served with distinction until he was retired in 1946.

We have received from Myron Pierce, a very interesting description of an auto trip taken this summer with Mrs. Pierce to Florida. We regret that our classmates cannot enjoy reading this account in full as we have. It extended from March 11 to April 29 and covered 4,000 miles. He said, "We caught the spring going and coming." As we watched the flowing landscape at New Castle, Delaware, that quaint old town brought to our memory our classmate Dan Bates." Again he said, "When coming along the St. John's River in Jacksonville, N. C., we drove for quite a few miles along the shore where the estates are very attractive. I wish I had known which was the one our classmate Mrs. Dodd (Helen Chamberlain) laid out." This trip was quite an accomplishment for a man of 80 years, as he did all the driving himself. We regret to report the following deaths. Robert D. Flood, at the James King Home, Chicago, Ill., which he entered in 1949. He passed away May 3, 1954. Ernest C. Atkins, 71 Chiswick Road, Edgewood, R. I., June 14, 1954. Through the kindness of Samuel Smetters we just received a newspaper notice of the funeral services for Mrs. Helen Chamberlain Dodd, at West Newbury, Vt. Mrs. Dodd with her late husband was among the first to enter Vermont's maple sugar industry. She died August 23, 1954. A letter received September 2 from Mrs. Helen Tozier, Rochester, N. Y., conveying the news of the death of her husband Harry on August 20. "He had failed during the summer. He was very brave with his condition, and was very ill at the last. I am very lonesome but am grateful that he has found peace. Am just writing to let you know and to say how much he enjoyed your letters these past years." These letters and notices have been acknowledged. Changes of address: Charles Johnson, 6390 General Diaz Street, New Orleans 24, La. Abram Garfield, 1740 E. 12th Street, Cleveland 14, Ohio. Joel H. Pillsbury, 4849 Selkirk Street, Vancouver 9, Canada. — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge 38, Mass. FREDERICK W. DAMON, *Assistant Secretary*, Commander Hotel, Cambridge 38, Mass.

• 1897 •

Shortly before our graduation 57½ years ago, John A. Collins, Jr., was elected permanent secretary-treasurer of the Class. It is our painful duty to announce that John died August 14 after a long illness at Overlook Hospital, Summit, N. J.

He was devoted to the welfare of the Class and served conscientiously as secretary-treasurer over the long period since graduation. For many years he served as an official of the Arlington Mills, Lawrence, Mass. More complete details will be given next month. He suffered the loss of his beloved wife a few years ago and recently has lived with his son, John Oliver Collins '27 at 805 Shadow Lawn Drive, Westfield, N. J.

The undersigned will endeavor to carry on as acting secretary-treasurer until a successor is appointed.

Members of the Class are proud of the recognition and honor accorded Walter Humphreys as described in detail in the

July issue of The Review. We refer to the citation he received from the M.I.T. Corporation commemorating his 25th year as secretary presented at M.I.T.'s 88th commencement exercises by Dr. Compton. Subsequently, on Alumni Day at the luncheon in the Great Court, Walter received from President Killian a set of 12 Technology bone china plates, numbered '97 in thoughtful recognition of his class membership.

Seated together under the big tent the following members of the Class and their wives were present at the luncheon, and incidentally those who brought wraps were comfortably protected against an east wind. William and Mrs. Binley, Professor and Mrs. C. B. Breed, Luzerne S. Cowles and son, Jere R. and Mrs. Daniell, Walter Humphreys, John P. and Mrs. Ilsley, George R. and Mrs. Wadleigh.

Arthur Lewis Jennings passed away on July 26 in Washington, D.C., after a long illness. He was buried in Atlanta after funeral services in Washington. Many will remember Arthur pleasantly from numerous class reunions. He was noted among his classmates for his sunny disposition, modesty, his loyalty to M.I.T. and generosity to his friends. His scholastic standing was very high. He was associated as a young man with the Pennsylvania Lines West, later with the B. F. Sturtevant Company in Philadelphia and Boston as purchasing agent. He introduced the Rockwood sprinkler in the South and then was called back as manager and treasurer of the family business, Russell Jennings Manufacturing Company, residing for some time in Deep River, Conn., his father's old home. He was later connected with the Meyer Sniffen Company of New York as treasurer.

During this New York experience the Jennings family resided at New Rochelle where Arthur maintained a large auxiliary-powered cat boat. Wadleigh and Arthur had several Long Island Sound cruises together with great fun all around. On one of these to Shelter Island the late Fred Cutter '95 was encountered, who challenged them at golf. As none of the trio could break 110 the mutual recrimination was more exciting than the game. Along with many others Arthur had difficulties during the depression years. He and Mrs. Jennings went to Atlanta to live in 1933 where he had various industrial and government jobs. During World War II he held responsible positions with the War Production Board, the R.F.C., and the War Assets Administration from which he resigned in 1947 because of ill health. Since 1949, Arthur and Mrs. Jennings had made their home with their daughter Mrs. Margaret J. Harlepp in Washington, D.C. He is survived also by his son, Charles H. Jennings. Margaret writes, "Mother and I particularly wish to thank his many classmates who were so kind and generous during the past two years. The assistance of these loyal friends considerably lightened the burden of his long ordeal for the whole family. Much cheer and well being was added in the last difficult months by this loyalty. The beautiful flowers were also much appreciated by mother and me."

Dougherty sends in this item after a recent talk with Fred Hunnewell. A *Mau-*

retania cruise to the Caribbean about a year ago, and a *Caronia* cruise to the Mediterranean and Scandinavian countries this spring have convinced Hunnewell and his wife that a ship cruise offers a continuing change in scenery and people it would be hard to get in any other way. Days at sea follow shipboard customs, but the time ashore presents a series of interesting scenes in town and country, in widely separated areas, differing in many ways. For instance, the West Indies circuit included stops from the Virgin Islands to Venezuela and from Barbados to Panama and Cuba and the European route included Morocco, The Riviera, Spain, Portugal, Ireland, Sweden, Denmark, Norway, Holland, France and England. Of course the contact with places and people was transient and superficial but the sights and sounds are well remembered and set apart the various places and the inhabitants.

At some ports the ship lay alongside a convenient dock, while at others the ship's boats shuttled from ship to shore. This service was rendered by Cunard facilities and shore excursions were arranged by Thomas Cook and Son. The cruise passengers were from all parts of North America (about 700 on the *Mauretania* and around 400 on the *Caronia*). Conversation disclosed that the ship cruise business, cultivated by several steamship lines, has developed a clientele all its own as many of those on board had been on previous cruises or contemplated reservations for future trips. Altogether, life afloat and ashore, on a cruise, is unique in many ways and the Hunnewells recommend a cruise in a well-run ship as a delightful departure from routine.

Additional items of interest regarding the late Harry Worcester have come to hand, many from Gutleben '35.

Born in Lowell, Mass., Harry lived for many years in Dorchester. After leaving M.I.T. he gravitated into the Arbuckle Refinery under benefit of directorial relationship. Hiring at that time was a prerequisite of the superintendent who fixed the stipend according to personal judgement. He urged his prejudice against hiring relatives of officials (Jarvis) but deferred to Chief Engineer Robert Sayre Kent's request for a draftsman. When pay day arrived, there was no envelope for Harry, and Kent suggested to the superintendent the propriety of following the conventions as to paying the laborer some hire. The superintendent demanded, "Is he worth anything?" On Kent's assurance that the lad possessed quality, the superintendent fixed a rate of a dollar a day. Shortly this was doubled and then promotion followed a steeply rising graph. Then came the opportunity to become superintendent of the little old Revere Refinery in Charlestown. After a short time he junked the plant and replaced it with the present efficient refinery unit of the United Fruit Company. After some years in demonstrating that he was "worth something," he was promoted to the staff job of vice-president at headquarters of the United Fruit Company in Boston.

One day the president of United Fruit told Harry that a Harvard Professor had stated that beet sugar was inferior and in

fact injurious to health and he asked Worcester if this were true. Worcester replied that he would be delighted if he could say so but unfortunately it was not true. If the two sugars are refined with equal care, there is no discernible difference.

The United Fruit passenger ships were serving Domino wrapped tablets. When this came to the notice of the president, he asked Harry Worcester if Revere could supply wrapped tablets. Harry replied that the only reason the Revere Refinery did not do it was that it would involve the loss of money that would have to be charged to advertising. President Zemurray admitted that the reason was well taken but nevertheless he authorized Harry to install tablet-wrapping equipment and supply these tablets to the ships of the United Fruit Company and associated companies. Thereafter the United Fruit discontinued advertising Domino sugar produced by a competitor.

When Harry approached 65, he gave some thought to retiring and even made some plans which were especially attractive to Mrs. Worcester. When President Zemurray heard of it he told Henry that this would be impossible as he was too urgently needed to retire. About five years later upon retiring from United Fruit Company he became president of the New England Carbide Tool Company, manufacturers of hard-tipped cutting tools for machine shops. The company had been organized by his late son-in-law but at the end of World War II due to cancellations of contracts, the company had serious financial problems. Harry then took over the management of the plant and after some years of vigorous effort, the company not only was brought onto an even keel but paid all its debts and accumulated a generous surplus. Six years after he had inherited the task, he paid the first dividend, chalking up another successful undertaking. However, Harry finished this task and soon became involved in another project for which he took responsibility.

Harry had a similar experience with a plant that made spun metal products. Like the tool project, it possessed the know-how for the production of a product for which a demand could be developed, and likewise it was also overwhelmed with debt at the time Harry took it over. He brought the operations of this new company into gilt-edged position. All of this was accomplished in spite of cataracts in his eyes which required many months of operations. For two years he was unable to drive his car because of defective eyesight.

Harry was also president of the Morningside Laundry, Silver Spring, Md., which he had acquired for his son to operate and the C. W. Corngrén Company, Somerville, Mass. He was director of the Cambridge Savings Bank and the Manati Sugar Corporation. Among others he was a member of the Algonquin, Engineers and University Clubs of Boston and the Winchester Country Club. In addition to his home at 111 Church Street, Winchester, Harry had a summer place at Annisquam, Mass., and a farm at Frankestown, N. H. — JOHN P. ILSLEY, *Acting-Secretary*, 26 Columbine Road, Milton 87, Mass.

• 1898 •

Due to numerous reasons, the principal one of which was misunderstanding as to the date for submitting copy, no '98 Class notes will appear in this issue of *The Review*. Let all the boys and girls and friends of '98 possess their souls in patience. We promise a double portion in December. — EDWARD S. CHAPIN, *Secretary*, 463 Commercial Street, Boston 13, Mass. ELLIOT R. BARKER, *Assistant Secretary*, 20 Lombard Road, Arlington 74, Mass.

• 1899 •

Alumni festivities at M.I.T. began for your Secretary on Tuesday, June 8, when a dinner was given at the Faculty Club for Alumni Fund Secretaries. Fifty-fifth reunion notes: Classmates who desired to be together during the reunion were housed on the second floor at Burton House on Memorial Drive. They included Fred Waddell, Carroll Brown, Timothy O'Hearn, Ed Packard and Henry Eaton. Here they were greeted Saturday afternoon by Hervey Skinner and Burt Rickards of the reunion committee. After an hour's chat the group moved to the Faculty Club where they were joined later by Harry Mork, Percy Witherell, Walter Bean, George Perkins, Jim Ellery, Miles Richmond, Brainard Taylor, Harry White, Ed Pierce and Bill Kinsman. A cocktail party preceding an excellent roast beef dinner gave an opportunity for renewing old friendships. After the dinner classmates engaged in a most interesting series of reminiscences of things that happened at M.I.T. during our undergraduate years or since. The class luncheon on the campus on Alumni Day was attended by Jim Ellery, Charles Schmidt, Percy Witherell, Harry White and niece, Henry Skinner and Burt Rickards. At the cocktail party in the Georgian Room preceding the alumni dinner were Harry Mork, Jim Ellery, Percy Witherell, Miles Richmond, Charlie Schmidt, Ed Packard, Carroll Brown and Mrs. Brown, Tim Kinsman and Mrs. Kinsman, Hervey Skinner and Mrs. Skinner, Harry White and his niece and Burt Rickards. Of the above Jim Ellery, Harry Mork, Percy Witherell, Bernard Taylor, Hervey Skinner and Burt Rickards attended the alumni dinner.

Timothy C. O'Hearn, one of the classmates who attended the class reunion dinner Saturday night, June 12, slipped and fell in the shower room of the Burton House, on Monday June 14, and cut his lip so severely that he was transferred to the M.I.T. Infirmary where several stitches had to be taken. He was discharged from the Infirmary on Tuesday, June 15. Tim suffered a partial stroke some years ago and is obliged to use a cane. He and your Secretary were classmates for four years in the Cambridge High School.

Change of address: Norman P. Rood has changed his address in Mexico City to Montes Corpatoes, 5-15 Lomas de Chapaltapee, Mexico City 19D F. Dudley Pray, V, address has been changed from Newtonville, Mass., to P.O. Box 221, South Boston, Mass. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, New York. MILES S. RICHMOND, *Assistant Secretary*, 1793 Beacon Street, Brookline 16, Mass.

• 1900 •

Our annual informal reunion began, as usual, with the Alumni Day luncheon on the Institute campus on Monday, June 14. Present were Father Brock, Stanley Fitch, Sheldon Graff, Aleck Newhall and Alice, Charlie Smith and Elsie, Herbert Stearns, Clarence Walworth, Minnie Lawley and the Secretary. Zenas Briggs joined us for part of our social hour. Luncheon followed an hour or so of greetings among ourselves and with friends of other classes. The luncheon gave us another hour together socially and then we enjoyed the formal program of the general reunion.

That evening five of us met again for the annual Stein dinner at the Statler. This included Briggs, Fitch, Newhall, Stearns and the writer. Tuesday morning we went to Cotuit for our regular reunion at The Pines. Here we were met by some who did not attend the Alumni Day festivities. As usual, we remained at The Pines for two days. This year seven of our classmates and nine guests attended — a total party of 16. These included George Atwood, Bob Blair, Zenas Briggs, Stanley Fitch and daughter Katherine Forbes, Bill Hart and Louise, Louis Crowell and daughters Gita and Lydia, and the writer and wife, Lou. We were greatly pleased to also have with us at this reunion Alice Newhall, (Aleck could not take time off from his new hotel that he is building in Brookline) Minnie Lawley and Jean Russell with her friend Margaret Williams.

Despite the small number present the reunion was all that we could desire. There was no formal program and no great activity. We ate our meals at one long table and spent most of the time visiting with one another. The most strenuous activity was shuffle board! We left on Thursday, perfectly satisfied and hoping for as good a reunion with many more present next year at our fifty-fifth. There is no question that it must be held at The Pines.

We regret to add to our class necrology the names of Hal Jouett who died March 7, 1954 and Louis Crowell who passed on September 1. Both of these have been noted many times in these notes and their history is well known. Living on the Cape as he did Louis has never missed one of our reunions. We shall miss him greatly in the future and sincerely hope that his two daughters will continue to join us in all class activities.

In the last number of *The Review* we noted the death of Ernest Cleveland. Since then his wife has kindly sent us the following information about him. "Ernest became a building inspector for the State in 1907. He came to Springfield in 1908 and lived here until his death. He retired in 1935 and from then on we lived a quiet life, enjoying trips once in a while. We have two children, a daughter, Mrs. K. W. Kyle, who lives in Stoneham, Mass., and has two children, a son and a daughter, and a son, Ernest, Jr., who lives in Troy, Ohio. He also has a son and a daughter. Ernest's greatest pleasure was visiting his children and we made the trip to Ohio once a year. He was a member of the Church Brotherhood and enjoyed going to their suppers and lectures. He was also a member of the Hampden Lodge of Masons.

For the past 10 or 15 years Ernest was not able to do much as he had a heart condition, but we did enjoy trips and he loved to work in the yard and we had a fine full life together. June 25 would have been our fortieth anniversary."

The announcement of the 1954 reunion sent out last spring with an enclosed questionnaire has elicited quite a few letters and considerable information which we will try to share with you during the coming months. For instance, George Leach writes from Brockton, Mass.: "Retired from George E. Keith Company in 1948 after 50 years service — last as executive vice-president. But still active in a kindred line that invites much traveling. Also as executive committeeman of Liberty Mutual Insurance Company and director of Trust Department, Brockton National Bank. Both World Wars ran most of City's drives and various others. Associated with various social service organizations, past and present. Still take Congregational Church membership seriously and golf still but no longer baseball and football." He reports two sons and one daughter and four grandchildren divided fifty-fifty.

And from John Dakin: "Instructor in Haverhill High School. Member of First Congregational Church, Haverhill. Deacon. Married Ruth W. Merrill, Oct. 27, 1917. One daughter, Janet, Colby College and Mary Hitchcock Laboratory and Dartmouth College. Worked in clinic, Concord, N. H., and then head of Blood Laboratory, Doctor's Hospital, New York City. Married John Charles Rowell, Ph.D. Columbia, a research chemist with DuPont. They have three children." This report seems to be more about daughter Janet than John! We will have more to report next month. — ELBERT G. ALLEN, *Secretary*, 11 Richfield Road, West Newton 65, Mass.

• 1901 •

Last spring I reported the death of John McGann which occurred in April. Since then I have received further information concerning John's life from his son, John F. McGann, Jr. In 1901 John entered the firm founded by his father, Founders and Finishers of Brass and Bronze, and became president of the company in 1941. He joined the Massachusetts Charitable Mechanics Association in 1940 and was elected to the Board of Governors in 1943. He served on the Finance Committee from 1943 until his death. He was president of the Central Cooperative Bank of Somerville, a member of the Board of the Brighton Five Cents Savings Bank, Treasurer of St. Catherine's Conference of St. Vincent de Paul, Past Exalted Ruler and Past District Deputy of the Somerville Lodge of Elks, trustee of the Somerville Public Library, director of Civil Defense during World War II, a charter member of the Somerville Chamber of Commerce and a charter member and past president of the Somerville Rotary Club. He is survived by two sons, a daughter and five grandchildren.

A letter from his son informed me of the death of Arthur K. Trenholme in Portland, Ore., in January. He was 77 years old and is survived by three sons, a daughter and seven grandchildren. "His years of service

both in the Portland Public Schools and in the golfing circles of our city were long and successful. To the last he felt that he had lived a full and interesting life." I have also received notice of the death of Leon E. Crouch, I, who died in May 1952.

Allen McDaniel of Waterford, Va., reports: "My principal activities during the past two and one half years have included the preparation of a complete report of the Baha'i Temple project at Wilmette, Ill. While I am now supposed to be retired, I still do consulting work of an occasional and somewhat casual nature in the field of building construction. I have read the class notes with deep interest and note with great regret and sorrow the passing of so many of our classmates, especially those whom I have been privileged to know personally and been associated with in past years. Our ranks are thinning rapidly and we are forced to realize that the declining years are upon us."

From George Hall of Pasadena: "I don't think there is anything new or interesting I could report. Will be 77 on March 26 and am fairly well. My old firm of Brett and Hall dissolved in 1914 and both of us went to Washington to do camp planning work in World War I. Came to Pasadena in 1920 as a member of Cook and Hall, later Cook, Hall and Cornell. Brett and Hall made plans for building the City of Prince Rupert, B.C., and Cook and Hall made the original plans for the Administration Center for the City and County of Los Angeles. Am now retired and the firm is dissolved."

I am sorry to report that at the time of this writing (September) our president, Joe Evans, is in the hospital seriously ill. I understand that his condition is somewhat improved and it is hoped that he is over the worst of it.

If some of you backsliders don't come across with some news, there will be no 1901 class notes before the winter is over. Many have not replied to the Class Letter. — THEODORE H. TAFT, *Secretary*, Box 124, East Jaffrey, N. H. WILLARD W. DOW, *Assistant Secretary*, 287 Oakland Street, Wellesley Hills 82, Mass.

• 1902 •

As Class Secretaries have been asked to be brief in their notes the several letters received from members of the Class are edited rather than given in full. Collier and Hammond have written about Florida and as the minds of some will be turning toward winter vacations when this is read they will be of interest. Collier and Mrs. Collier left Marblehead April 1, and made a six weeks' trip south. After an overnight stop in New Jersey to visit a nephew they headed south by way of the eastern shore of Maryland and to quote the letter: "The main highway was a disappointment in that it did not follow the shore — where may be found many of the lovely homes both old and new. Nevertheless we found the farm country delightful and the towns very pleasant. We stopped at a modern hotel in Easton, the Tidewater Inn, and Mrs. Collier has raved about their soft-shelled crabs ever since. The next day, Sunday, we finally located Charles Kellogg's place, a fine Georgian Colonial home located on a bend of the river about

a mile from the road. His daughter and granddaughter entertained us until Charles and his wife came home from church and then we enjoyed a pleasant hour with them. His farm is a real one, 400 acres, with cattle, pigs, sheep, and even peacocks. He raises corn and soy beans and declared it was a thrill to be in a business which promotes food items for people."

After leaving the Kelloggs they visited some of the famous gardens in South Carolina and then made Jacksonville. "A night in Jacksonville and the next day spent mostly in St. Augustine with its old fort. After a night in Cocoa, in the heart of the Indian River citrus belt, we arrived at Fort Lauderdale for a week's sojourn. Its many canals give it the name of the 'Venice of America.' While here we found Lester Hammond at his pleasant home of modern design surrounded by flowers and tropical plants, and located on one of the aforementioned canals. To get to his boat all he has to do is to cross his lawn, and it's just a short distance from his wharf to the ocean where he and his brother, also of Fort Lauderdale, do a great deal of fishing. We met several times and enjoyed being his guests for dinner at the Jolly Roger, one of the beach hotels."

"A few days at Miami Beach and then to Key West to visit a second cousin . . . At Clearwater Beach, our next stop, we visited the Grant Taylors in the town proper. . . . They are making some changes and improvements in their home with intention of soon making it their permanent residence. But due to their many years in Brookline, Mass., and their many acquaintances there this was a difficult step to take. Leaving Clearwater Beach we went to Orlando and to Spartanburg, S. C., to contact some distant relatives in both places. At Spartanburg we made a side trip to Asheville, N. C., and then headed North, with stops in New Jersey and Long Island."

Hammond in his letter writes of rounding up '02 men in Florida. "When I called on Grant Taylor he was making additions to a house he had bought and was in the process of moving. . . . I found Austin Wood just moving into a new house which he built. It is a beautiful house with his backyard on a branch of the river. Mrs. Wood claims to be a real fisherman so we may hear about records she makes fishing right at home. One day was spent with Harlan Chapman at Winter Park. We in Fort Lauderdale think we have the best location in Florida but I must admit Winter Park is beautiful. It is in a college town and one of the oldest in Florida with lots of big trees and pretty lakes. Harlan has recently bought a lovely house and is permanently located in it. . . . So you see all four of us have just decided to settle down, I only wish I had done it sooner. . . . My son, Bradford, has two children, one and three years old. Working at engineering on the Standard Oil plant near Elizabeth, N. J., for the McKee Company, I have three sisters here on the Cape and my brother Jim located, retired, at Fort Lauderdale and another brother just retired living at Peekskill. So I have 10 months at Fort Lauderdale and two here on the Cape." Here I would remark that

as a former Californian I am pleased to learn that Judson has sold his home in Coconut Grove, Fla., and will settle in Bakersfield, Calif., having seen the light.

Louis Cates and Mrs. Cates were motoring in Europe this summer and sent a postcard from Heidelberg. Farley Gannett spent three months in Spain on the Island of Mallorca and has written Dan Patch a very interesting letter which will be shared in the December notes. A news clipping sent in by Grant Taylor tells of the celebration of their fiftieth wedding anniversary by Alfred Katzenmeier and Mrs. Katzenmeier last July. With them for the celebration were their five children and nine grandchildren. Katzenmeier retired several years ago after 50 years as a manual training teacher in the Newport, R. I., schools. It will be recalled that Katzenmeier and his wife attended Alumni Day two years ago. At the meeting of the American Institute of Architects in Boston last June, Saylor received the Edward C. Kemper Award, an annual award usually given for service to the Institute. The presentation reads "The American Institute of Architects fittingly presents The Edward C. Kemper Award to one who was long his fellow worker Henry Hodgman Saylor, F.A.I.A. Master of Words, who through a long lifetime of dedication to architectural journalism has served his profession with inviolate integrity. Under his editorship *The Architectural Review*, *Country Life in America*, *Home and Garden*, *Architecture*, and currently *The Journal* of the Institute have provided food for the mind, stimulus for the imagination, and nourishment for the spirit. The latest of his many published books, *The Dictionary of Architecture*, is an indispensable item in professional libraries. For the sum of his contribution and the goodness of his influence the Profession and the Institute are gratefully appreciative."

Dan Patch who has served for years on the Camp Becket Committee which is responsible for the operation of the camp under the State Executive Committee of the Y.M.C.A. was pleasantly remembered this summer by the gift of a silver medallion mounted on a walnut plaque bearing the inscription "Claude E. Patch, for distinguished service to Camp Becket 1928-1954 Y.M.C.A."

As is to be expected death makes its inroads on our membership. Charles L. Wright, Course X, died in Andover, Conn., on May 30th. In the early years after graduation Wright was much interested in fuel problems and served on both the U. S. Geological Survey and the U. S. Bureau of Mines and was the author of several papers dealing with briquetting. He also served several engineering firms either as employee or consultant in the field of fuel engineering. In 1916 he had given up his professional duties except as consultant and was venturing into scientific poultry raising. Our class records since then are nil.

Roland B. Pendergast died July 6 but we have no details. However it is hoped that some will be available later. Another classmate was lost by the death of Walton H. Sears on August 7. Sears, at the time of his death, was retired and made Bethel, Maine, his legal residence but still returned winters to his old home in Arling-

ton, Mass. He had been connected with waterworks, for many years having been mechanical engineer with the Metropolitan District Water Supply Commission and its successor the Construction Division of the Metropolitan District Commission from 1926 to 1948. While here he was engaged in the design and construction of the Ware and Swift Rivers Water Supply and the Nut Island Sewage Treatment Plant. Previously, 1922-1926, he had been associated as consulting engineer with Fay, Spofford, and Thorndike. His earlier experience had been gained by employment in the motive Power Department of the Boston and Maine Railroad, then as mechanical engineer with the Charles River Commission on design and construction of the Charles River dam, later as supervising engineer, Bureau of Yards and Docks at Washington and Charleston, W. Va., followed by two years as plant engineer for the Atwood and McManus Box Company, Chelsea, Mass. Sears leaves his wife, Mrs. Edith Russell Sears, a son, Walton H. Sears, Jr., Professor of Mathematics at the U. S. Naval Academy; a daughter, Mrs. Ralph Dennison of Reading, and two grandchildren.

More information has been received regarding Elmer M. Hervey whose passing was reported in the last notes. He started his career with General Electric in Schenectady, N. Y., where he remained for three years. He then went to Chicago and worked for several electrical concerns and at one time was with the Electrical Department of the Chicago Sanitary District. Later he joined his brother-in-law in the firm of E. O. Sessions Company, Ltd., where he remained for 30 years. Upon the death of his brother-in-law in 1934, he entered the employ of the City of Detroit as electrical engineer. After eight years he returned again to private employment. He left his wife, Argeane Sessions Hervey, whom he married in 1904. There were no children.

Alumni Day did not bring out as many of the Class as was wished. The following were present at the luncheon in the Great Court: Bassett and Mrs. Bassett, Collier, Mrs. Collier, and their niece, Mrs. Collier '28; Hunter, Moore and Mrs. Moore, Edwin E. Nelson, Patch, Philbrick, Grant Taylor and Mrs. Taylor. All were present at the banquet except Patch who unfortunately could not come. A pleasant feature of the evening was a special introduction of '02 to the assembly by Carlton B. Allen, Jr., who presented the 25-year class gift to the Institute. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

• 1903 •

A note from Gilbert H. Gleason in May records the 50th anniversary of the wedding of Horace S. Baker at the Hopewell Valley Country Club near Pennington, N. J. I quote from Gib's letter: "What with old friends, children, grandchildren and one great grandchild it was a most festive occasion. It is a pleasure to report that H. S. is real spry both physically and mentally, especially the latter." Baker's wife is the sister of Ralph Yerxa. Your Assistant Secretary was not able to attend the festivities of Alumni Day but the following members of the Class attended the

luncheon at noon: Bob King and his wife, Carleton Green, LeRoy Gould, John Nolan, Fred Eustis and his wife. Fred also attended the evening banquet. Homer D. Strong, V, died in Winsted, Conn., on June 26, 1954, after a short illness. The following is from the *Hartford Courant*: "Before retiring about 20 years ago he was an officer of the Strong Manufacturing Company. He was a member of the First Church of Winsted, St. Andrews Lodge, A.F. and A.M., and was a 32nd Degree Mason. He leaves his wife and one brother." Walter F. Roper, II, died in Foxboro, Mass., on April 1, 1954. No further details are available. Dr. Katharine Blunt, President Emeritus of Connecticut College, died at New London, Conn., on July 29, 1954. Quoting from the *Boston Herald*: "She became the first woman president of the College in 1929 and held that post until 1946. During that time she was credited with bringing about a large expansion of the college plant. She was graduated from Vassar College in 1898," and later was with our Class at the Institute. She received a doctor's degree in Chemistry from the University of Chicago; was an instructor at Vassar and at Pratt Institute in Brooklyn and then was appointed to the chemistry staff at Chicago. She remained there 16 years and became chairman of the home economics department. She was a member and a past officer of various associations and societies. Of a more cheerful note E. H. Millard, II, long with Fort Pitt Bridge Works, retired as works manager and director, on April 5, 1954. Millard had been a director since 1944 and works manager since 1941. He had a long career in the steel fabricating industry, particularly in the erection of gas holders and blast furnaces. We congratulate him on his retirement and hope that he lives long to enjoy it. I. F. Atwood, II, Vice-president of the New England Box Company, in Chelsea, Mass., was elected president of the Chelsea Savings Bank on May 25, 1954. Atwood has been associated with the bank as senior member of the bank's board of investment and has served as trustee since 1913. He has been the class representative on the Alumni Council for several years. W. E. Mitchell, VI, was honored by the Southern Association of Science and Industry on April 22, 1954. The *Atlanta Constitution* has the following to say in regard to the honor and Mitchell: "S.A.S.I. annually honors an industrialist, a scientist and a journalist for outstanding work in their fields leading to the more rapid development of the South. A non-profit, non-political organization, founded in 1941, S.A.S.I. co-operates closely with the Southern Governor's Conference. In selecting Mitchell the Committee was particularly impressed with his many activities in civic welfare. He has served as president of the Atlanta Chamber of Commerce, chairman of the board of the Georgia Tech Research Institute, president of the Southeastern Electric Exchange and Director of the Edison Electric Institute. He has headed fundraising drives for Red Cross and other charities." Your Assistant Secretary remembers with pleasure his short visit with Bill last January. A recent letter from him tells of a very serious accident to C. S. Glenn, VI, in Paris last winter. Bill writes

"He made an excellent comeback but recently had a very serious case of pneumonia which in his generally weakened condition was bad. I am hoping for some news that he has passed the crisis." This was under date of June 2. — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1904 •

This is the story of the 50th, or Golden Anniversary of the Graduation of the Class of 1904, M.I.T. It consists of a relation of the experience of an eyewitness, together with an account of some events at which this eyewitness was not present and which the writer made up by hearsay from others. To remove all doubts from your minds, if any exists, (I mean if any doubts exist, not minds) let me state before proceeding further that the writer is the aforesaid "eyewitness" and none other than your Secretary, who thus confesses his identity and thereby assumes all responsibility and liability for any statements which may occur herein. All complaints of any nature regarding this story should be made directly to him, as no other class officer will pay any attention to such complaints, if any, and he probably will not either. To simplify matters the writer now states that when he refers to himself anywhere herein he will use the personal pronoun "I" and when he uses the personal pronoun "we" he means he and Mrs. Stevens because wherever he went, she was with him. There are some authors and radio program conductors, who refer to themselves as "we" when speaking of individual acts, thus classifying themselves with kings, princes, potentates and editors. I do not hold with this practice and when I report anything I did individually, I shall say "I," and when Mrs. Stevens and I did something I shall say "we" did. I just want to make things clear.

For our Class, the 50th commenced about 10 A.M. on June 11, when about 40 of our Class gathered in the "robing room" at the Armory and there went through, for most of them, an unique act. I refer to the donning of "caps and gowns," things which were wholly unknown to Tech men in our days. Our official graduation uniform consisted of striped trousers, a black "Prince Albert" coat and a tall silk hat, which in my opinion is slightly more usable afterwards than the present clothing. Thus clad in caps and gowns the faithful 40± joined the Academic Procession with Currier Lang as marshal of our group and proceeded to the Rockwell Cage where they sat on the stage, with the Class of 1954 and listened to a masterly address by Clarence B. Randall, President of the Inland Steel Company. This so far, is all hearsay, because I did not participate, as my locomotive apparatus is very sluggish and I did not want to be a drag in the speed of this parade.

However, we drove over from Allston and found a beautiful spot to park, at the corner of Memorial Drive and Massachusetts Avenue, whence we walked to the Great Court in ample time to wait about two hours for the arrival of the crowd from Rockwell Cage for the luncheon, at

which 1904, some other classes of like vintage, and the graduating class, their guests, various members of the M.I.T. faculty and administration and special dignitaries were seated in a special tent and our Class at least, were guests of President Killian. As the 50-year Class, we were right in the middle of the tent. There were about 50 of us present and it was certainly a wonderful thing to see and greet many whom we had not seen for years. The lunch was especially fine but the high light of it was the remarks to the Class of 1954 by our own Carle R. Hayward. His talk was a masterpiece and just right in every way and was much enjoyed by all his hearers. The doings at the lunch lasted for a couple of hours, and then we went back to the parked car, and left for Osterville and the Oyster Harbors Club for our own private 1904 celebration. We arrived about 5:50 P.M. after a good ride down. We found some had arrived earlier and, of course, some came later, but there was a good crowd on hand for the evening meal, when we arrived after sundry visits to various rooms. After dinner, Mrs. Currier Lang and her ladies' committee gathered the girls together to get acquainted, and to listen to Frank Milliken tell them about rides about the Cape and to Everett Hiller who told about the plans for the boat rides the next day. As far as the men were concerned, it was mostly an evening made up of "Do you remember this or that" talks, and so forth, and making some plans for the next day. At this point, I stopped writing a couple of days ago, and in starting in again it seemed a good idea to look over the foregoing. I am glad I did because I find I did not do justice to Carle Hayward's remarks at the lunch on July 11. The theme of his talk was "Oysters" perhaps suggested to him because we were going to the Oyster Harbors Club for our reunion. At any rate, he said graduates were usually advised that the "world was their oyster," but that the opening of oysters was a more or less difficult operation, unless one had the proper tools. He said that the Class of 1904 had been given proper tools by M.I.T. and had opened their oysters with considerable success and he said that the members of 1954 having been provided by M.I.T. with tools having 50 years of improvement over ours, he could see no reason why they should not be able to open their oysters with increased success. As I said earlier we thought his address was good and showed conclusive evidence of the benefit of Arlo Bates' English course, which we all had to take, reluctantly, and for which at that time, we could see no reason. Now, after 50 years we can see there was plenty of reason for it.

The history has now progressed to Saturday, June 12. There was fog, drizzle and rain early, but by the time we were up and around it had cleared away and the day continued fairly good although there was a "smoky Southwester" which filled the air with dampness and made visibility poor. Everett Hiller had made arrangements with a local boat man to run four two hour trips around the adjacent waterways, two in the morning and two in the afternoon. The boat was a large comfortable party type motor launch

which would accommodate 20 to 25 passengers. We went on the 11 o'clock trip and it was most enjoyable. The water was smooth but with just enough waves to let one know he was not on land, but not enough to disturb the most delicate stomach. We got a fine view of the shore line and the many beautiful residences along it. The other three trips were well patronized and all were grateful to Everett Hiller for his thoughtful preparation.

During the forenoon, our athletic members brought out their drivers, mid irons, and putters and went at the golf links. *O tempora O mores!!* What a difference. In place of 25 players of former years, this year there were five stalwart men and Mrs. C. J. Emerson. This is some of the "hearsay" stuff because that boat ride was much easier. A full report of the results of this golf (?) will be found further on. It should be stated here that the golf was in charge of Ed Parker, who drummed up the trade, assigned the handicaps and awarded the prizes.

Under suggestions from, and directed by Frank Milliken, at various times during the day, many of the girls who drove their cars, took others who didn't, on rides to various parts of the Cape. For those who were familiar with the country, it was interesting to see the changes which have been made since we were all down there at reunions some years ago. And for those who were making their first Cape visit, it showed them some very interesting sights. There are many show places in that section and there were some marvelous groups of rhododendrons in full bloom, and also the roses were just coming out. All in all, the rides were very enjoyable and gave much pleasure to those who went on them. The class picture was scheduled to be taken at 1:30 was slightly delayed about an hour because of the slowness of some of us at dinner. However, we were all gathered in a huge semicircle and the camera swept over us twice. No cries of pain were heard so it is presumed all were looking pleasant. The picture was taken on the lawn, where at 5:30 we all gathered around a table on which were two large punch bowls, filled with liquid in which swam several kinds of fruit. I noticed that the liquid in one of the bowls seemed to be exhausted more rapidly and oftener than the liquid in the other bowl. The reason for this I wouldn't know. I had some from the more rapidly exhaustible bowl, and being entirely satisfied with it saw no reason to try any from the other. This social hour was well attended and highly enjoyed by all.

We had been advised by the preliminary notices, that the only planned meal would be dinner at 6:30 on Saturday. I had been advised that I was to be "toastmaster" and so at 6:25 I started to prepare a wonderful address. To my surprise, however, there seemed to be no difference in this meal from any other except that everybody was on hand and there were no stragglers and latecomers. It had been stated that after dinner the ladies would withdraw and leave us men to that thing called the Class Meeting. So I busied myself with assimilating my food and rehearsing my speech in my mind, awaiting the moment when the clatter of knives and forks and conversation should cease, and

in the ensuing silence I should rise and say "Ladies, Classmates and Visiting Firemen" and dive into my carefully prepared speech. To my relief, when that moment of silence arrived, and before I could rise, the ladies arose and withdrew. It was a beautiful job of withdrawal, and now nobody, not even me, myself, knows what would have been in my speech.

During the dinner each of the ladies was given a box containing two packs of playing cards with "M.I.T. 1904" in cardinal and red on the back. There were enough left over to give to the unattached men.

Before launching into a description of our latest Class Meeting I think it may not be amiss to say a few words about our class organization. While we were undergraduates, there was a definite class organization, with a Constitution and a board of officers consisting of a president, first and second vice-presidents, secretary and treasurer. From the records contained in our Senior Portfolio, I am able to state that our Freshmen President was Charles Homer, "voted the most popular man in the Class"; the Sophomore President was Leonard P. Burnham and the Junior President was Preston M. Smith. I found that John F. Card was Junior Class first vice-president and Currier Lang was Junior Class secretary and Reg Wentworth was Junior Class Treasurer. In our Senior year the president was Walter Hadley and first vice-President was Guy Eastman; the second vice-president was Leonard Burnham; Arthur Bartlett was secretary and George Curtis was treasurer. The remaining Class Officers of our undergraduate years are veiled in mystery. With a constitution and such a set up of class officers it might have seemed that such an organization could have been maintained after graduation, but such was not the case. Whether there was any official change voted I am not sure, but after some time the Class officers came to be a secretary and an assistant secretary who were elected to serve for three year terms, and in their hands lay the destiny of this Class of 1904. I do not remember who the first secretaries were but in 1910 Everett Hiller and Addison Holmes ascended to the throne and in 1913 by efforts of unknown friends (?) I was elected Secretary and Maynard Holcombe, Assistant Secretary. One day Addie Holmes came into my office and with a grin on his face dropped a book on the table and handed me a check, saying "You are now Secretary of the Class of 1904 and there are the records." The book was a cash account and the check was the class treasury balance. Thus began my career as Class Secretary. My actions so far pleased the Classmates that in 1916 when I was expecting release from the job, by a misplaced burst of zeal they elected me "Secretary ad Vitam." In the early days there were class dues of \$1.00 per year which I soon gave up trying to collect, and substituted "assessments" whenever money was needed, which scheme has worked very well.

Class activities have mostly been confined to reunions, with a few scattered class luncheons, or dinners. In the early days there were functions called All Technology Reunions which came every five

years, the first being in 1904. There was one in 1909 and the one due in 1914 was delayed until 1916 when the Institute sailed across the Charles River to Cambridge. At each of these All Technology affairs 1904 was more or less prominent, as you might expect. I think the last All Technology affair was around 1927 at the New Ocean House at Swampscott, since which time there has been substituted the modern Alumni Day. Our individual class efforts have consisted of reunions running from Friday afternoons to Sunday afternoons on some weekend in June. The first as I remember was at the Vesper Country Club, located on Tyng's Island in the Merrimac River above Lowell, but I do not remember the year. I remember one down at Pemberton and in 1916 we went to the Straitsmouth Inn in Rockport, Mass. In 1919 our 15th reunion came around and we went up to Mont Vernon, N. H. From that time until 1941 we had a reunion every year, climaxed by the 25th in 1929. From 1920 to 1929 we went down to Cape Cod at the Wianno Club or East Bay Lodge, but in 1939 for our 35th, due to requests from classmates away from Boston we went to Boxwood Manor at Old Lyme, Conn. with very beneficial results as to attendance. Then the war came and our reunions were given up, because of no gas or transportation. Half a dozen of the boys got together in 1944 for the 40th and our 45th in 1949 was well attended. 1944 and 1949 were the only two class functions I failed to attend.

That gives you all a brief idea of the life of our Class as far as get-togethers are concerned. Always at our reunions, after dinner on Saturday night, there was held the so-called Class Meeting and we are now about ready to recount the doings of the Class Meeting which went with our 50th. After our ladies had withdrawn to occupy themselves with Canasta, Scrabble and similar amusements, Carle Hayward opened the meeting with a few brief remarks on the efforts of he and Gene Russell in making the arrangements for the 50th. Then he read about 30 letters from classmates, who for one reason or another were unable to be with us. Many contained somewhat of a biography of the writer which were most interesting to us. After he had finished he turned the meeting over to me, as the only Class Officer. I immediately called on Ed Parker who had been in charge of the arrangements for golf. He had worked out a very efficient scheme of handicapping which he declined to explain at all. "Those participating were Charlie Haynes, Tammie Rockwood, General Holcombe, Mark Magnuson and E. Francis Parker to say nothing of Mrs Charles Emerson. Saying nothing about her is not fair, for while I did not keep her score, I am positive that, if I had, and had applied the wonderful handicap system, she would have won, hands down, from all others playing. The handicap plan worked out very well and the net scores for four of the men players for eighteen holes were 79, 80, 80 and 81. There was absolutely no tampering with the score cards handed in by the players, or by the score keepers. I may add that the net score for the fifth man was so much higher than the others that

it will not be mentioned." The above quotation is from a report from Ed to me. (You will note that he does not say who got what score, nor does he say who his fifth man was, who got so much higher score than the others. From information and observations accumulated in former years, I am quite sure I know who was the fifth man.) Again quoting, "Possibly your records should show just how the valuable prizes were awarded. There were exactly one dozen first grade golf balls to be handed out. Three each went to the winners of low gross and low net. That left six more. (Note that he does not reveal who got low gross or low net). Tammie Rockwood got one for the longest drive on the first hole. Magnuson beat both Haynes and Rockwood (winners of low gross and net *respectfully*) on the third hole so he was entitled to one ball. Magnuson played with General Holcombe who beat Magnuson on that hole so the General got one ball. That left three unawarded balls. After Mrs. Emerson had played so well and without doubt suffered plenty at watching me, she was entitled to two and she got 'em. For obtaining the biggest score, the final ball was awarded to Ed Parker. So everyone who played got a prize and all were happy. If others are dissatisfied, ask them why the heck they didn't play." I submit, my classmates, there WAS a golf tournament(!) If you read the quotation above you can figure out who got what(!) And am I glad that Haynes and Rockwood "respectfully" won low gross and low net(!) I am very grateful to Ed for his report.

After Ed's report on the golf tournament and his awarding of the prizes, we were entertained by a moving picture, which could have been entitled "1904 at Play." The script for this picture was written by E. Francis Parker. The film was directed and produced by E. F. Parker and the camera work was by Ed Parker. The picture showed interesting events at previous reunions at East Bay Lodge and at Boxwood Manor. The actors were very readily recognized and some of them were at the 50th. We were particularly pleased to see on the screen Mert Emerson, Humphrey Haley, Charlie Stebbins, Jack Draper, Bob Dennie, Bill Anthony, Don Galusha, well-loved members of 1904 who have been cut down by the all devouring scythe of time, and gathered into the land where their fathers have gone before them. It was good indeed to have their images brought back to us so clearly. The film was most enjoyable and Ed has our thanks for his efforts.

During the meeting Bob Sosman distributed an astonishing booklet in which he has listed about 300 eating places in New York City. By means of a complicated system of symbols the reader is able to get complete information regarding these places which answers every question one could think to ask and many more. Bob does this as a hobby and says it takes about three years to make the rounds. Most of the data were collected personally by him.

In my previous remarks about our class organization I neglected to mention the fact that for many years now our class representative on the Alumni Council has been Gene Russell, and he has been most faithful in his duties there. Through him

we are kept closely in touch with Alumni Association matters. While we have apparently been entirely satisfied with our class organization, with all the power resident in one official, the Secretary, who has functioned more or less efficiently, and with the exception of a period of eclipse, which now, Thank Heaven, has ended, has conducted himself and the Class affairs in a manner which has seemed to you, satisfactory. However, we learn from Gene that our organization has been subject to more or less criticism from Alumni Association headquarters. It seems other classes have presidents and regional vice-presidents, and so forth and so the brass in the Association seemed to think we should conform. We did not quite see why because we have been perfectly satisfied with our setup for nearly 50 years, and so far as we know the Class has satisfied all demands upon it. However, in order not to be non-conformist it was decided that I should conduct the election of a president, and regional vice-presidents at our 1954 Class Meeting, which I proceeded to do. It resulted in the election of Carle R. Hayward as President, a perfectly logical selection as he had done a wonderful job on the 50th reunion arrangements and he is located at M.I.T. close to the head of everything. It is expected that the President and the Secretary will look out for the interests of the Class for the New England section east of the Connecticut River. In order to have someone to cover class interest in the rest of the country regional vice-presidents were elected. Currier Lang was elected Regional Vice-president for the territory west of the Connecticut River, and extending to the Ohio River and the Mason-Dixon Line. L.H.G. Bouscaren was elected Regional Vice-president for the Chicago area, extending from the Ohio and Mississippi Rivers to the Gulf of Mexico and West to the Rocky Mountains. Harry T. Rollins was elected Regional Vice-president for the Pacific area extending from the Rocky Mountains to the Pacific Coast and including the Hawaiian and the Philippine Islands. These elections having been accomplished without the slightest hitch when it was suggested from the floor that a Regional Vice-president was needed for the Southeastern Section of the country, known as "Winter Headquarters" and Amasa M. Holcombe (the General) was unanimously elected to fill that position for the area east of the Mississippi River, and bounded on the North by the Mason-Dixon Line, on the South by the Gulf of Mexico and on the East by the Atlantic Ocean. I might say that all the other elections were also unanimous. All this having been accomplished our new President arose and in a fine speech of acceptance said he didn't think too well of the procedure, but would carry out the class affairs to the best of his ability, which in our opinion is considerable. He further suggested that without the great assistance he had received from Gene Russell in class affairs, particularly in the 50th reunion arrangements and in handling the class finances the 50th reunion would not have been a success. He proposed that Gene be elected treasurer, which was immediately done. So now the Class of 1904 is fully equipped with officers and the Secretary of the Alumni As-

sociation of the M.I.T. has been so notified.

The Class Officers are as follows: Carle R. Hayward, President, Room 35-304, M.I.T. Cambridge; Currier Lang, Regional Vice-president, Bettsworth Road, Norwalk, Conn.; L. H. G. Bouscaren, Regional Vice-president, 646 Prospect Avenue, Winnetka, Ill.; Harry T. Rollins, Regional Vice-president, Box 709, La Jolla, Calif.; Amasa M. Holcombe, Regional Vice-president, 438 Munsey Bldg., Washington, D.C.; Eugene H. Russell, Jr., Treasurer, 82 Stevens Road, Needham, Mass.; Henry W. Stevens, Secretary, Apt. 18, 1082 Commonwealth Avenue, Boston 15, Mass. Proclamation: The Class of 1904, M.I.T., is now officially organized with a full line of officers and is now equipped to transact any business which may legally come before it. All interested will take due notice and govern themselves accordingly.

After such a momentous action no further business appearing, the class meeting was adjourned *sine die* in ample time to greet our ladies when they had finished with canasta, samba, scrabble, and so forth. After a time of relaxation from duty done and labor well accomplished, a great quiet gradually settled over the Oyster Harbors Club as we sought our downy couches to prepare for another day.

Early on the morning of Sunday, June 13, there was a gale of wind accompanied by a heavy fall of rain, but by the time we were gathered for our breakfast, both had stopped, but the day continued cloudy and gradually grew cooler. However, the weather interfered not at all with our enjoyment of our surroundings and our companions.

Everyone conducted themselves during the forenoon of June 13 in accordance with his or her individual inclinations.

We drove over to Centerville to call on some friends who have recently purchased a home there and left the great City of Boston, and we enjoyed our visit with them.

In the afternoon Mrs. Hiller gave the ladies a tea party at her home in Centerville.

Needless to say, all the ladies attended and returned enthusiastic over the party provided by their charming hostess, and enchanted with the lovely home. I hereby express the thanks of the Class for her kind and thoughtful act which added much to the pleasures of the reunion. I understand that there were a few of us men who were fortunate enough to be at the tea party for one reason or another but I was not one of those so fortunate. However, the other and better half of "us" was there and I got the information regarding the tea party from her.

Unfortunately we considered it best to return to Boston before the evening meal on Sunday as our driver was anxious to avoid as much of the usual Sunday evening traffic as possible and also to avoid the rush and hurry of driving up on Monday morning to participate in the events of Alumni Day. Thus we missed the most interesting illustrated talk given by Bob Phinney on Sunday evening. Bob gave a fine talk on his recent experiences on a trip to Europe and the Near East. He had many pictures to show the interesting things of which he spoke and he held the interest of his audience throughout. At the

conclusion of Bob's talk Grace Anthony showed some colored pictures of her home and some trips she had taken with our late classmate Bill Anthony. Grace was persuaded to come even though Bill is no longer with us and she was a great help in the women's group.

The final day of our 50th anniversary was of course Alumni Day. We did not attend any of the conference meetings in the forenoon. We again were successful in finding our parking spot at Memorial Drive and Mass. Avenue and arrived in time for the Alumni Luncheon in the Great Court. There we were again seated in the middle of the tent, where we had again some 40 or 50 of 1904 present. We sat at the head table, where I was introduced as "The permanent Secretary of the 50-year Class." An introduction which was received by applause from 1904 much to my gratification. From this vantage point I could see seated among our 1904 men several who had not been previously seen during the events. We listened with interest to President Killian when he told about the present problems and achievements at M.I.T. It really seemed to be a strange unfamiliar Institute, as indeed it should, when we tried to compare it to the Institute we knew so well so long ago. Indeed Time Marches On and we have seen where it has been marching and producing during these past 50 years. Our wonder now is, where will it "march" and what will it produce as it continues to "march on."

The day was a typical cloudy New England day with a cold northeast wind, but no rain. It was just such a day as we had on our Class Day in 1904. How many of you also remember that? After the luncheon, came the visits about the Institute which is truly a place of magnificent distances. We used to travel some pretty good distances, from old Rogers Building to the Pierce Building, but now the surroundings are much more attractive, although there used to be plenty to see on Boylston Street, in Copley Square and in Trinity Place. Then there was the open house at President Killian's house and eventually we arrived at the Statler about five o'clock to participate in the General Cocktail Party. At this, our Class was well represented in the large gathering present. The party was like all such affairs, a good opportunity to meet and converse with friends on many subjects. Also from time to time one would meet old friends from other classes and the time passed very pleasantly. In the group in which I found myself there was considerable talk about who might be the youngest member of 1904. We all know that Dan Comstock was one of the "young ones" of the Class. He was in the group discussing the subject and we soon found that in August 1883, Clarence Williams was born on the 12th, Cy Ferris was born on the 13th and Dan Comstock was born on the 14th. So right away Dan seemed to be the youngest of the class. All three were present that evening. After I had returned here and had a chance to consult the records contained in the Senior Portfolio (a most valuable book by the way) I found that Karl E. Peiler was born on November 25, 1883 in Hartford, Conn. So until someone comes forward with proof of a later birth date, Karl

is our "Class Baby" and it seems quite appropriate that for many years, Karl has been instrumental in the design and manufacture of glass bottles — of all kinds — and in his own native city, and his address is still Hartford, Conn. However, there are 112 on our list of living members, for whom we have no birth date so there is a chance that Karl might not be our "Class Baby" after all. With such kinds of conversation the time passed rapidly until at 7 P.M. we were all gathered for two banquets — the Stein-on-the-Table Banquet for the men and a smaller banquet for our ladies.

After many years of being located in the rear of banquet halls, we now found ourselves, as members of the 50-year Class, up near the front of the hall, near the head table. My memory ran back to 1904 when, as the graduating Class, we sat in the second row at the Tech Night at the "Pops" in Symphony Hall, the front row being reserved for the 25-year class (it must have been the Class of '79) for in those days the 50-year class had not come into existence, and the 25-year class was an "aged" bunch. I remember thinking, as I watched them march in, "What a bunch of superannuated old dodos." Now as the 50-year Class, I am sure we do not feel as old as we thought they looked then. And this year, when the Class of '29, the 25-year class, arose and vociferated loudly from time to time with class cheers and such noises, my reaction was "The kids are a noisy bunch tonight." Our viewpoint certainly changes with time. Strange as it may seem, we were so charged with dignity that not one of us even thought of rising and instituting one of our class cheers. You may remember it: "1904 M.I.T. MCMIV Four Four M.I.T."

The banquet was like all banquets, a lot of noise and enthusiasm. Our Gus Bouscaren sat at the Head Table and at the proper time he arose and presented our class gift to Dr. Compton, for transmission to the Institute. Gus had been in charge of raising this gift and his little speech was a gem. The amount of the gift was \$15,000 in new money to which should be added \$21,620 given by members of the Class to the recent Development Fund Campaign and which by agreement at that time was classed as advance payment on the Class Gift. Dr. Compton received the gift and as we listened to his graceful acceptance little did we think that he was so soon to leave us and his ashes to be scattered over the Great Court at M.I.T. so that he shall forever remain in that great Institution to which he had given so much of his time and energy. Figuratively, we rise and stand with bowed heads in honor of a great and noble man. *Ave atque Vale. Requiescat in Pace.*

Of course there were other speeches, large and small, and you will find a comprehensive account elsewhere. The 1904 men at the Banquet were E. H. Russell, Jr., Hayward, Parker, Holcombe, Ferris, Rockwood, F. H. Davis, Stevens, Porter, Blum, Whittaker, Lang, G. Palmer, Sosman, Fellows, Munster, Comstock, the Carty twins, Francis and Maurice; Kendall, H. K. Richardson, Ingram, Phinney, Kaiser, Magnuson, Fred Farrell and son, C. B. Williams, and Bouscaren.

At the banquet for our ladies, which was addressed by Mrs. Karl Compton on the subject of her recent European trip, were Mrs. E. H. Russell, Jr., Mrs. Ferris, Mrs. Holcombe, Mrs. Lang, Mrs. Hayward, Mrs. Blum, Mrs. Stevens, Mrs. C. B. Williams, Mrs. Phinney, Mrs. Kaiser, Mrs. F. H. Davis, Mrs. Bouscaren and our classmate Mrs. Katherine Dexter McCormick. And so with these two banquets, at which all enjoyed themselves to the utmost the events of our 50th anniversary came to an end.

I have tried to present a picture of the events of our 50th anniversary and in preparing it I have had some assistance from Carle Hayward, Gene Russell, Ed Parker and Mrs. Stevens. However, as I said in the beginning I accept all responsibility and the omissions, if any, are mine. Some of those who helped to plan for the reunion and carry out the plans have been mentioned but a large contributing factor was the able and energetic women's committee under the chairmanship of Mrs. Currier Lang. The other members were Mrs. Anthony, Mrs. Ralph Hayden (unable to be present), Mrs. Hayward, Mrs. Guy Palmer, Mrs. Phinney, Mrs. E. Russell, Mrs. Stevens, Mrs. Whitaker. As Secretary I extend to all who helped, the grateful appreciation of the Class of 1904.

I did not keep a list of those present at the two lunches at the Great Court, nor do I know who was at the graduation exercises, except I do know that my old buddy and "thesis mate" Phil Sweetser was at the graduation and the lunch that day, and he was most regretful that he could not attend subsequent events. We were sorry indeed that two of our more famous classmates were unable to be present at all, Herb Kalmus, President of "Technicolor," who was in Paris instituting a French Technicolor Company; and Art Willard, formerly president of the University of Illinois. Also missed were Bill Eager, Stan Skowronski, Charlie Homer, Oscar Thurlow, Joe Haraden and others who had intended to come but were prevented by late events which occurred unexpectedly.

The big picture taken on June 12 at Oyster Harbors came out very well indeed. Carle Hayward has prepared an identification list of those appearing therein. I have received one from him and I assume all who appear have also received one and will no doubt find it a valuable aid to the memory, as I did. Carle has told me that he has sent a copy of the picture to The Review, in the hope it will be published there for you all to see. The picture was taken by the Fay Foto Service Inc. 43-53 West Canton Street, Boston, Mass. If any of you would like a copy of the picture they may be ordered from that company, the price we paid being \$2.00 per copy. Carle Hayward will be glad to send you one of his identification lists, on applications to him.

I have no doubt you will all be interested to know who attended our 50th anniversary, I have already confessed I do not know much about who attended the Graduation Exercises, or the lunch at the Great Court that day, but I am quite sure that most of the Oyster Harbors contingent were present. I have already listed those present at the banquets at the Statler on Alumni Day and at the lunch in the

Great Court on Alumni Day we noted the presence of Fred Farrell, Dan Comstock, Maurice and Francis Carty and Alden Drew.

At Oyster Harbors, the following classmates were present accompanied by their wives: Blum, W. B. Boggis, Bouscaren, Coupe, F. H. Davis, C. J. Emerson, Ferris, Groves, Hadley, Haynes, Hayward, Hiller, Holbrook, Holcombe, Kaiser, Lang, Langley, Milliken, Martenet, Needham, Paine, G. P. Palmer, R. Palmer, Peiler, Phinney, Porter, Rockwood, Rollins, E. H. Russell, Jr., L. A. Russell, Severy, Stevens, Sutton, Whitaker, C. B. Williams. Also present, unaccompanied were Ainsworth, Mrs. W. S. Anthony, Cunningham, Curtis, Fellows, Ingram, Kendall, Magnuson, Munster, Parker, H. K. Richardson, A. D. Smith and Sosman; a total of 47 men and 36 women, 83 in all. When we add to this the eight or 10 who attended the other events, the 35 who sent messages, the 17 who sent regrets and the sole member of our once numerous female classmates, (known as co-eds in the old days) who attended our functions, Mrs. Katherine Dexter McCormick, we find that 146± out of our 227 remaining classmates, took some part in our 50th anniversary, which I, at least, think is a pretty good showing.

So after you have read this account, you who were unable to partake at all, know something about what you have missed. We who were fortunate enough to attend, had a most wonderful time and we all are sorry indeed for you absentees. We are all agreed it was the biggest and best reunion the Class of 1904 M.I.T. ever staged.

To substantiate our belief along that line, I am happy to quote from a letter to me from Don Severance, Alumni Secretary; "From my observation, I would say that your Class had about the finest 50th Reunion which I have had any experience with at the Institute. I think everything went fine for your group from Commencement right on through your own Reunion and on into Alumni Day. I hope it meant many happy memories for everyone who was with us."

One day late in August Mrs. Stevens and I drove up to Winchester, N.H. and spent a very pleasant afternoon with Shorty and Mrs. Holbrook. He has since written me and said that by October 1, the mornings became so cool that it was uncomfortable to get up and start the morning fire and that time they would return to Pittsburgh where they can enjoy natural gas heat.

Dwight Fellows has flitted about considerably this summer. Right after our 50th he went down to Wellfleet for a time and from there he went up and spent some time in his ancestral acres in Enfield, N.H. Then he became imbued with a drive to see again the copper country where he was soon after his graduation as a Mining Engineer, and under date of Sept. 17 I had a letter from him, a part of which I share with you all. I think you will agree with me that Dwight has had a "good time so far." He did not like it too well because we had two hurricanes while he was away, and could not "enjoy" them with us. I am sorry for that, but I never heard before of "enjoying" a hurricane. Here is an extract from his letter:

"Dear Henry: I am on the home stretch

now as I leave here tomorrow morning, Saturday, via Canada en route home. I have had a most enjoyable trip, considerably longer than I had planned at first. First I drove up to the old Copper Country of Northern Michigan up on Lake Superior where I lived for many years. Then westward through the Iron country to Duluth, then south to Minneapolis and then on to Des Moines, Iowa. I was in Des Moines in time to see President Eisenhower and ex-President Hoover arrive and later take off by plane after their visit to the Iowa State Fair. They left there, you will remember, for their fishing trip in Colorado. I spent considerable time in the Copper Country and especially in Des Moines. Incidentally you may be interested to know that, in spite of my arthritic back, I went horseback riding in Des Moines with no lameness or trouble with my back. (The Dr. had told me some time ago that I could not ride any more but I knew he did not know me as I do). Detroit is one city where I need a compass to get around. It has grown so big since I used to know it that I have no idea where I am and it always did seem to be oriented wrong anyway. Anyway I always heave a sigh of relief whenever I get out of here and find I am headed in the right direction. I shall hope to see you soon now. Maybe you and Gus and I can get together and lose another tooth. Will it be safe to have Ed Parker along too? The sun is now trying to come out so maybe I won't need a compass. I am sure looking forward to seeing your history of the Class of '04. Take good care of yourself with all best wishes as ever, Sincerely, Dwight."

And I will close this account, with quotation of a remark which I have heard Gene Russell make many times: "So far, I have had a GOODTIME."—HENRY W. STEVENS, *Secretary*, Whitney Homestead, Stow, Mass.

• 1905 •

Early in June the 49th reunion scheduled for June 25, 26 and 27 at the Wianno Club was called off on account of lack of enrollments. Apparently the coming 50th took the lustre off a mere 49th, which means, we hope, that the accumulation of enthusiasm, vim and vigor will help produce the biggest 50th ever. That reunion will be held at Stoneleigh Gables, Hyannisport, Cape Cod, Mass., on June 10, 11 and 12, 1955. Stoneleigh Gables was the unanimous choice of the available hostilities of the committee consisting of Barrier, Ball and Goodale. At the present time about 125 have signified their intention of attending, this number including approximately 50 of the wives. It will be necessary for you to make formal registration with the reunion committee on blanks furnished by us by June 1, 1955. You will receive full information with travel suggestions, enrollment blanks and so on, early next spring; meanwhile keep generating enthusiasm and contact any or all '05 men in your neighborhood who have not signified their intention to come.

At Alumni Day in June we had a goodly attendance, Mr. and Mrs. Babcock, Mr. and Mrs. Shapira, Damon, Gammons, Joslin, Kenway, Marcy, McLean, Buff and to assist in secretarial duties, my daughter,

Mrs. Hazen E. Bickford, accompanied me. At the Alumni Dinner in the evening Babcock, Damon, Joslin, McLean, and yours truly attended.

The resurrected '05 Flivver, mailed you in May was almost 100 per cent the result of the labors of Grove Marcy. I have had many congratulatory messages on it and with them considerable news. Casey Turner writes: "You can congratulate us also. After four attempts, my son, Rod, received a grandson who will be burdened with carrying on my name. It will be his responsibility solely. Put us down for the 50th, I will postpone the Board of Commerce Cruise, if necessary." Great spirit, Casey and Helen. Walter Burns: "I retired from the Sales Department of the American Dyewood Company and its subsidiary, New York Color and Chemical Company on January 1, 1954. I spent the months of February, March and April at Daytona Beach, Fla. We are now living at 1689 Broad Street, Cranston, R. I. Will probably attend the 1955 reunion." Roy Allen: "Mrs. Allen and I are planning on spending the winter in Arizona and California, leaving as soon as my present task is completed, late in the fall, but hope to return in time for our 50th." Better make it, Roy. That must be a grand schoolhouse you have just completed. Mrs. Ray White: "I wish I could make reservations for both Ray and myself, but cannot as Ray still is unable to walk or talk or write. He still improves very slowly but steadily and can make us understand better. I feel sure he will get all well. Ray would be glad to see any '05 men, who happen to be traveling through, though he cannot visit much." Here's hoping someone will be able to make contact. The address is Colleton Avenue, Summerville, S. C. Louis Killion: "The 50th!! I'll be there. Check enclosed. Good luck. Written at 5:30 A.M." What a man. Gets up before breakfast to write his Secretary. Frank Chesterman: "Have been doing a lot of work with the Boy Scouts as chairman of Region Three, comprising Pennsylvania, Delaware, Maryland and Virginia."

Bertrand Johnson: "I find I last wrote you in September, 1953, at which time I was looking for a position which would make me eligible for social security. I eventually found one as a research abstractor for the Arctic Institute of North America. My nine years of exploratory work in Alaska helped there. I worked with them until a few months ago and expect to go back with them in September." Edward C. Smith: "After 40 years with the National Carbon Company, (U.C. and C. Corporation) I retired July 1, 1945. Served in factories and in research laboratory in various capacities, a pleasant and satisfactory experience. Depending now on pension and a bit of social security." Willard Simpson: "I will never forget my introduction to the group under the trees at the inn at Old Lyme at our 40th reunion. I got there late and the innkeeper was leading me down the steps to show me the class group and point them out and I made the remark, 'Gee, is that bunch of old fogies my classmates?' Ross Davis heard it and stood up and addressed himself to me stating, 'We may look like a bunch of old fogies to you but you don't look like a young brat to us, who in the

devil are you?' I answered him by naming five of the fellows standing in the group including Robbe, Shapira, Buff, Ross Davis and one or two others that I had not seen in 40 years, much to the surprise of Ross. After a few minutes, they all seemed just as young to me as the day we had graduated 40 years before. Well, at the risk of shocks and sadness, and so on, I am looking forward to being with the Class again, which will be only the second time in the 50 years. I am really looking forward to being with the bunch in 1955 and I can see no reason, barring unforeseen accidents, that would prevent it. While I am getting along in years, I am still active in my business. I have not had the opportunity nor the desire to retire as yet, in fact, I have got to keep W. E. Simpson Company, Consulting Engineers going, because I need them to make a living, not only for myself but the rest of them."

Doc Lewis writes: "Doc Lewis published a book on Industrial Stoichiometry in 1926 with Arthur Radasch, '20 (now head of the Department of Chemical Engineering, Cooper Union) as co-author. This June a second edition, completely rewritten, appeared with Doc's boy, H. Clay Lewis '37, Professor of Chemical Engineering, Georgia School of Technology, as third co-author." I wish you could see a picture in the Boston *Herald* of last June showing Percy A. Goodale being zipped into a rainy day suit, preparatory to playing in his thirty-fifth Father and Son Golf Tournament, held annually at the Winchester (Mass.) Country Club. Percy missed one year because son, Bob, was a year under the age limit for entry. This time he and Bob scored 113, which is high enough so that the weather may be blamed. Ray Bell, in sending check for dues does not relish the idea of "dues to end all dues." He wants to be around to send a similar amount for the next 25. And Charlie Mayer adds "Who you kidding? We'll have to celebrate the 55th and the 60th." Ray writes under the letterhead of the Commission on Organization of the Executive Branch of the Government (Hoover Commission) that he is conducting a survey of real property of the federal government for the above commission and that the astronomic quantities with which he is dealing could easily make it impossible to conceive of anything as small as five bucks. He expects his assignment will terminate next June, too late for our 50th. Will some aught-fiver in Washington please get Mr. Hoover to convince this diligent man that he is not indispensable June 10-15 of next year?

Charlie Mayer, by the way, has been doing a good job of organizing in the Los Angeles area. He drove 60 miles to Ontario, Calif., to meet and chum with Herb Bailey, and together they went to Fontana, found Jim Gladding and had an '05 confab. Charles says, "I had a grand visit with Herb Bailey. He lost his wife about four years ago and is living with his daughter. We hunted up Jim Gladding, who is in the contracting business with his son, building construction, schools, and so on. Bailey's hobby is pottery, ceramics, working with Boy Scouts. Jim Banash is now living at 11901 Sunset

Boulevard, West Los Angeles. Bailey called on him recently." Incidentally Bailey reports direct that his ability to make our 50th depends upon his ability to convince his brothers to hold their five-year "Bailey Boys Bust" on Cape Cod in June, 1955. Here's hoping. Gilbert Tower tells me that he recently accepted an invitation from Harry Donald's widow to attend a service at the Episcopal Church in Cohasset in June, at which a church flag was unfurled in Harry's memory. Harry had been a very prominent member of the church for years.

The Boston *Herald* of August 24 contains a notice of the death of the oldest M.I.T. Alumnus, 100 years old on July 10, 1954, W. A. Prentiss, of Holyoke, Mass., father of George W. Prentiss of our Class. I had seen George within a few months, at which time he told me of his father's rather vigorous old age. Ralph Patch volunteers the information that he has heard from Ilias A. Murr, lost for some years as far as our records go; that he is alive and vigorous, has fairly recently designed two buildings, medical and industrial in Beirut; is owner of the Roxy Cinema and "is getting along just fine."

We have the following sad news to report. Andy and Mrs. Fisher, Bill Ball and I attended the funeral of Sidney T. Strickland at Christ Church, Plymouth, Mass., on July 15. The casket was wrapped in a United States flag indicative of Sids' service as captain in the Military Intelligence Division, General Staff at Washington, D. C., during World War I. After graduation Sid attended the Ecole de Beaux Arts in Paris, formed the firm of Strickland, Blodgett and Saw; later with his son Charles operated under the name of Strickland and Strickland. Sid designed the Ritz Carlton and Shelton Hotels and the Junior League Building in Boston. He was the first chairman of the Massachusetts State Housing Commission. His hobby was the restoration of seventeenth century New England buildings, and several monuments to his memory of this type may be found in Plymouth, Mass. Kilborn Whitman, Jr., died on July 12, 1954 at his home in Roxbury, Mass. A friend of mine and associate of Whitman's in the office of Metcalf and Eddy tells me that Whitman was officially retired by the firm several years ago, but having no relatives or home associations, he spent practically all his waking hours in the little cubicle in the office, which he had occupied practically since graduation. The attachment was so great, that when feebleness crept on, he had to be escorted to his room, from which he was removed shortly afterwards to the hospital, where he died. Other deaths since last issue on which we have absolutely no details are Miss S. Janet Jameson, Medford, Mass., and William C. Marsh, Hinsdale, Ill.

The death of Sid Strickland, causing a vacancy in the office of assistant secretary, required that I appoint a replacement, at least until an official class meeting can confirm (or reject). I feel gratified that Gilbert S. Tower has consented to assist me. Due to modesty, I suppose, I have left the best until the last. My fourth grandchild, Daniel B. Maynard, Jr., arrived on

May 17, 1954, making a total of four, three of them boys. You fellows who have been bragging about quantity, take heed. Maybe I'll get you all yet. — FRED W. GOLDTHWAIT, *Secretary*, 274 Franklin Street, Boston, Mass. GILBERT S. TOWER, *Assistant Secretary*, 35 North Main Street, Cohasset, Mass.

• 1906 •

Following the usual practice your Secretary has received the annual letter from the Review Editor relative to the class notes for Volume 57 of *The Review* of which this November copy is the first issue. This letter advises that the most effective and best read notes are those which report as much news as possible about the greatest number of Alumni in the least amount of space. We will do our best to operate on this basis and shall appreciate support from classmates to obtain this result.

Seven of the Class attended some part of the Alumni Day program on June 14. At the luncheon were Bill Abbott, Sherman Chase, Stewart Coey, Charles Kasson, R. V. McKay and the two Secretaries. The ladies present were Mesdames Chase, Coey, Kidder and Rowe. The men listed as attending the luncheon with the exception of Coey and Kasson and including Abe Sherman made up our group of six at the evening banquet. Chester Hofer attended the morning Symposium but his personal schedule prevented him from attending other events. Stewart Coey attended the Honorary Secretaries' Dinner the night before Alumni Day. He and Betty left after the luncheon to open up their summer place at Squirrel Island, Me. Tom and Mrs. Hinckley had signed up for Alumni Day but an unexpected hospitalization kept him away. A telephone call to Tom at this writing (Sept. 8) found Tom and Mrs. Hinckley in excellent health, just having returned from five weeks of vacation, including points on the Cape and in Maine and New Hampshire, enjoying their membership in the Appalachian Mountain Club. R. V. McKay, III, from Dubuque, Iowa, appeared for the first time at this year's Alumni Day. He is an Honorary Secretary there. He moved to Dubuque in 1923 to take over a wholesale grocery business of his father-in-law after being in the steel business since graduation. At present he is the secretary and manager of the Key City Gas Company.

The Boston *Traveler* of June 10 included a photograph and write-up of our classmate Mrs. Eleanor Manning O'Connor under the caption "Traveler's Women of the Week." The article was in anticipation of the meeting of the A.I.A., held in Boston the following week. Mrs. O'Connor (Eleanor Manning), IV, began her career as an architectural draftsman with Lois Howe who was then a well-known Boston woman architect. They formed a partnership in 1913 and continued in business until 1936. Since then Mrs. O'Connor has worked as a free lance architect designing and renovating for a clientele that extends far beyond New England. She was the only woman of the 17 architects for a housing project known as Old Harbor Village, South Boston. She

designed houses for the Mariemount, Ohio, model community and prize-winning plans for a Cape Cod cottage. The writeup concludes with the following: — "Two designs, one accomplished and one still in the planning stage are Mrs. O'Connor's favorites. The first is a Cotswold-cottage type home fitted perfectly into a southern New Hampshire home. The second, a contemporary three-level structure cantilevered on a bluff on the California Coast, will be eventually her own home when her husband, a director of the Human Engineering Laboratories, decides to retire.

We are indebted to Frank Benham for interesting information contained in a letter which he received from Terrell Bartlett, San Antonio, written August 29. The letter stated that Terrell and Mrs. Bartlett took a five-week trip in the early summer including Grand Canyon, the West Coast from Coronado Island to San Francisco, Yosemite Park, Portland, where he visited Mt. Hood with our classmate, Henry Mears III; then Seattle, and Vancouver Island, S. W. Washington, N. W. Idaho to Snake River Canyon and home via Yellowstone and Denver. In Portland he had a visit with classmate R. E. Cushman II.

Class President Harold Coes sent the following letter of sympathy to the Institute Trustees on the death of Dr. Compton: "The Class of 1906 feels it has sustained a keen personal loss by the passing on of Dr. Compton. We admired and respected him for the great and fine man he was and those of us who knew him well were fond of him. We were proud of his accomplishments for M.I.T. and for the nation. He will be sorely missed in many places. May we respectfully tender our deepest sympathy." The Class was represented at the memorial service in the Great Court by Vice-president Sherman Chase and the two Secretaries. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills 82, Mass.

• 1907 •

At the Alumni Day celebration last June 14 the following '07 men were present: Franklin O. Adams, George Crane, Louis Freedman, Ralph Hudson, Hermann Mahr, Bryant Nichols, Bob Rand, Don Robbins, and Phil Walker. For Frank Adams this was his first return to the Institute since 1907. In 1914 he opened his own office as an architect in Tampa, Fla., and has operated in this way ever since, his office being at 404 Franklin St. He is a Fellow in the American Institute of Architects and combined his trip for attendance at Alumni Day with attendance at the Architect's Convention in Boston beginning on June 15. It was good to see Frank after the lapse of 47 years. He told me that his wife had passed away last May, and that his only son, Franklin Oliver Adams, III, is an invalid, while his daughter, Caroline, is a career girl, being employed by the magazine, *Business Week*, in their editorial department.

F. Eugene Banfield, who retired from active business in January, 1954, has built

a new home on Highland St., Holliston, Mass. He and his wife are moving into it from their former address in Whitinsville, Mass., during this month of November, 1954. Gene's son, Richard W. Banfield, has been extremely successful in the machine tool industry. In May of this year he was named to the newly-created position of executive vice-president of Niles-Bement-Pond Company, West Hartford, Conn., which includes the Pratt and Whitney Machine Tools Division, Pratt and Whitney Cutting Tool and Gage Division, Chandler-Evans Division, and the Potter and Johnston Company of Pawtucket, R. I., a subsidiary.

On August 21 Jim Barker wrote me that he had spent most of July in South America on Sears Roebuck business, making the circuit of the continent, but with two weeks in Brazil, where his company has two large stores and is building a third. He went to Venezuela, Colombia, and Peru last January and February. He wrote that "it was pleasant to re-visit the continent that I know so well from the past." Among the various offices held by Jim is that of chairman of the Board of Allstate Insurance Company, which is 100 per cent owned by Sears Roebuck. This company was founded in April, 1931, writing automobile liability insurance, and it is now second in size in the United States in this field. In March of this year it began to write fire insurance also. The July 28, 1954, issue of "Investor's Reader," published by Merrill Lynch, Pierce, Fenner, and Beane, contains an interesting write-up regarding the Allstate Company. The following quotation from this article relates directly to Jim: "Into this office (that of chairman) went James Madison Barker, wise and experienced. Searsman Jim Barker graduated from M.I.T. in 1907, engineered for such outfits as United States Steel and Canadian Pacific, then spent eight years in an American branch bank (First National of Boston, B.N.) in Buenos Aires, where he became one of the top bankers in Argentina. Opportunity walked in under the name of Lessing Rosenwald, senior vice-president of Sears. He soon convinced Jim Barker to switch to Sears. Jim moved to the United States and up in a hurry — regional manager, vice-president, treasurer, comptroller, and director. Today Jim is a director of Sears and one of the largest individual shareholders. He spends his working hours at Allstate (address 7447 Skokie Boulevard, Skokie, Illinois—14 miles from Chicago), where his prime job is 'the economic soundness of this company and its development.'"

Milton MacGregor, who lives in Brewster, on Cape Cod, in Massachusetts, wrote me last June that he had been appointed on a planning committee for a regional school for the towns of Orleans, Brewster, Eastham, Wellfleet, and Truro. He also sent me a long clipping from a Bridgeport, Conn., newspaper telling about the varied activities of his daughter, Elizabeth, who is the wife of Rev. Charles H. Crooker, pastor of Bethany Congregational Church in Bridgeport. Mother of three children, ages ten, seven, and five, a skilled needlewoman, an able and tireless church worker, a teacher in week-day church school program, a lecturer on current

books, a skier, a mountain climber of long experience begun under her father's training when she was a child, and a teacher of modern dancing at the Bridgeport Y.W.C.A. She holds high rank for versatility as a minister's wife.

From time to time during recent years several classmates have asked me, either by letter or conversation, about Charlie (or by some called "Everett") Allen, one of the best known and most popular men of our Class, both during undergraduate days and since 1907. He also was very prominent in business and community life. In 1916 he and Ed Squire formed Allen-Squire Company, manufacturers of men's shoes, their factories being located in Spencer, Mass., and they conducted an extremely successful and profitable business. In 1935 Charlie built a spacious 20-room mansion on a 200-acre site in Spencer, the place being known as "Allenacres." During recent years, however, misfortune in health and in business attended our classmate. In 1951 "Allenacres" was sold to become a monastery retreat under the supervision of the Trappist Monks, and in May, 1954, Allen-Squire Company was sold at public auction. Saddest of all, however, was Charlie's terrible physical condition. For the past four years he had some rare brain disease, related to the hardening of the arteries of the brain. He had a strong heart so he just lived on. He could not see and he could not hear. He had no sense of balance and fell down a lot—even down stairs—but did not seem to sustain physical injury from these falls. His wife took him out riding frequently, but he knew that he was traveling only by the movement of the car. Finally, on August 25, 1954, he passed away. For more than 25 years he was very active in Boy Scout work in the Worcester, Mass., area, having received the Silver Beaver Award from the Boy Scouts of America in 1938. He was at one time an officer in the Spencer National Bank, and was a member of several social and business clubs. He is survived by his wife, 6 Lincoln St., Spencer, Mass., a son, C. Boyd Allen of Spencer, and two daughters, Mrs. Penelope Stebbins of Holden, Mass., and Mrs. Barbara Booth of Worcester, Mass., also by 11 grandchildren. Another son, Pliny Allen, was killed in 1944 while on duty as tail gunner on an Army Air Corps bomber raid in Romania. In behalf of our Class, I wrote a letter of sympathy to Mrs. Allen, with whom I had had some previous correspondence concerning Charlie's condition.

On June 11 I received a note from Ethel S. Gupta (Mrs. Birendra C. Gupta) from 15 Baird Place, Cantonment, New Delhi, India, telling me of the death of her husband and our classmate on November 28, 1953. You men will probably remember this man of very dark skin who always wore his turban during our undergraduate days. He had attended Calcutta University and Bengal Engineering College, three years in each place, before the fall of 1903, when he came to Tech, where he received his degree in electrical engineering in 1907. He was nearly 72 years old at the time of his death. For a few months after graduation he was with British Thomson-Houston Company in

England, then went to India as electrical engineer on a power plant installation until January of 1913, when he became professor of electrical engineering at Bengal Engineering College in Calcutta. After 19 years in this capacity, he was principal of Dacca School of Engineering in India, and served there until July 1, 1938, when he became Chief Town Administrator for two towns in India under the control of Indian Iron and Steel Company, Ltd., a concern employing some 20,000 people. His jurisdiction covered all departments outside of the workshops themselves, and included buildings, roads, waterworks, drainage, sanitation, hospitals, policing, dairy farm, educational institutions, ice plants, meat and fish markets, bazaars and shops, clubs and institutes, and so forth. In 1943 Birendra retired from active work and lived in his own home that he had previously built in Darjeeling, West Bengal, India. According to a letter which I received on August 9 from his widow, in response to a note of sympathy that I had written her, our classmate had been a great sufferer from heart trouble since 1946, and in 1948 was so ill that his death was expected, but through the devoted care of one of his sons-in-law, who is a doctor, he lived until 1953, as noted above. In 1909 Birendra married Ethel Colcord of Lynn, Massachusetts, a girl whom he had met while at Tech. They were blessed with three daughters, all of whom are living. The husband of the oldest, Comola, is the director-general of All India Radio. They have a son and a daughter. The second daughter, Eunice, is married to a colonel of the Army Medical Service. They have two daughters. The husband of Tara, the youngest, is Minister of India to the Philippine Islands, and they have four children, three boys and a girl. Mrs. Gupta's letter of August 9, referred to above, was written from Indian Legation Residence in Manila. She wrote: "My daughter, Tara, thought that as I had not been out of India for the past 20 years, this was the time for me to do so. I flew here in May and plan to return to India before Christmas. My other two daughters live in Delhi, and I shall spend most of my time with them."

Through a clipping from the Santa Barbara (California) News Press that was thoughtfully sent to me by Fred Menner, I learned of the death on August 19, 1954, of our classmate, Winsor Soule. He had undergone an operation for a ruptured ulcer on August 9, which interrupted a fishing trip with his wife in Driggs, Idaho, where he passed away. As is my custom under such circumstances, I wrote a note of sympathy, on behalf of the Class, to Mrs. Soule. Winsor's preparatory school was St. Paul's at Concord, N. H. He received his A.B. degree at Harvard in 1905, and hence was with our Class at Tech for only two years, receiving his S.B. in architecture in 1907. He worked for four years in architects' offices in Boston and then went to Santa Barbara, where he has practised architecture, either privately or with a partner, continuously until the time of his death. His firm has specialized in churches, schools, and institutional structures, and has been prominent in advancing the types of Spanish architecture

and architectural harmony for which Santa Barbara has become famous. Winsor was on the original committee which founded the Santa Barbara Community Chest and for years was outstanding in Boy Scout activities. He had been president of the Rotary Club and was its song leader for a long time. He was also a leader in Y.M.C.A. and Salvation Army work, a former chairman of the Board of Park Commissioners, at one time president of the California State Board of Architectural Examiners and a member of the California Council of Architects. He has served on advisory architectural boards of both the Lutheran and the Presbyterian Churches in California, though he was an active member of the Episcopal Church. His great hobbies were fishing, hunting, and yachting. He was a member of the Santa Barbara and University Clubs. Winsor is survived by his wife, who lives at 715 Mission Canyon Road, Santa Barbara; by a 27-year old son, Winsor, Jr., and by a daughter, Mrs. Barbara I. Layton of Goleta, California.

It was through a clipping from the June, 1954, issue of *Paper Industry* that I first learned of the death of Sidney D. Wells, which occurred on May 16 in Washington, D. C. Sidney graduated with us in 1907 in the course in chemical engineering and during his entire career was associated with the pulp and paper industry. For a total of 13 years he was at United States Forest Products Laboratory at Madison, Wis. He worked for Mead Pulp and Paper Company at Chillicothe, Ohio; Chesapeake Pulp and Paper Company at West Point, Va.; Paper Mill Laboratories, Inc.; Nekoosa-Edwards Paper Company; Combined Locks (Wisconsin) Paper Company; for two years was a private consultant to the industry; and in 1938 joined the staff of The Institute of Paper Chemistry at Appleton, Wisconsin, which is a graduate school affiliated with Lawrence College, as a research associate. He retired on September 1, 1953, and in December of that year he and his wife moved to Poolesville, Md. After I learned of Sidney's death, I wrote a note of sympathy to Mrs. Wells, and under date of August 9, 1954, I received a gracious and informing reply from which I quote: "We came to Maryland as we thought the winters would be less severe than in upper Wisconsin, and we chose this locality in Poolesville, as our oldest son has a farm here situated on the Potomac with a beautiful view of the Blue Ridge Mountains in Virginia. We took a small apartment in the village but had plans of making living quarters in the lovely old pre-revolutionary stone barn on the farm. We had intended to do some traveling, but there wasn't time. Sidney had been under the care of a doctor because of high blood pressure, and the doctor had been very reassuring, but on a Sunday in church he was stricken with a severe pain, was taken immediately to the hospital, and died on the following Sunday without regaining consciousness." Sidney and his wife had seven children, six of whom are living. The oldest, Sidney, Jr., is with the Army Engineers in Washington; has two children. Daughter Hope is married to a professor of languages at University of Virginia, and has four children. Helen is

married to an attorney now serving as district attorney of Dane County, Madison, Wisconsin—four children. Martha is married to a newspaper man in Washington, D. C.,—four children. Mary is married to a public school administrator in Wisconsin and has three children. Benjamin served two years in the Navy and is now in his third year at University of Wisconsin. Note that Mrs. Wells now has 17 grandchildren. Sidney was a member of the Episcopal Church and of several professional societies. He was the inventor or originator of several processes relating to the pulp and paper industry.

Edward J. Tully, who was associated with our Class in the course in chemistry (Course VII), died in the Leominster (Mass.) Hospital on July 17, 1954. For 40 years he was chemical engineer for the Wisconsin State Board of Health, having retired in 1951. He was survived by his wife, Mary L., home address Box 379, Danville, Ill.

Roderic Barbour Barnes, affiliated with us in Course IV (Architecture), passed away at his home in Washington, Connecticut, on May 13, 1954. He was a graduate of Princeton in 1903, and studied architecture at Columbia University as well as at M.I.T. In 1911 he formed the partnership of Blanchard and Barnes, but since 1913 practised architecture independently. He designed the Town Club at Princeton and the Great Barrington, Mass., library.

André T. Kolatschevsky, who graduated with us in the course in electrical engineering, died on May 13, 1954, at his home at 48 Sussex Place, Slough, Bucks County, England, where he had lived since his retirement from active professional life. He was a specialist in telephone engineering, holding important positions in Leningrad (formerly St. Petersburg) in Russia from 1911 to 1924, then going with Bell Telephone Manufacturing Company at Antwerp, Belgium. He continued through his life to play the violin, as he did in the M.I.T. orchestra; was fond of water color painting; and wrote several comedies for stage presentation. He was married in 1908 and had a son born in 1910. I wrote a letter of sympathy addressed to his widow, but as of September 10, when these notes are being prepared, I had received no reply, so do not know the circumstances of his death or whether or not his family is now living.

In the July Review I told of the cerebral hemorrhage suffered last April by Alexander Macomber. Under date of September 3 I received a note from Mrs. Macomber, which reads, in part, as follows: "Alex has been convalescing at our small country place in Peterboro, N. H., and keeping very quiet, with no visitors or business correspondence. He faces about a year of such convalescence and if all goes well, should be able to resume normal contacts some time next year. In the meantime he is withdrawing from business connections and faces a definite retirement at the end of convalescence. We are all encouraged at the progress so far, but we have no illusions as to the difficulties ahead."

The final report on the operation of the 1953-1954 M.I.T. Alumni Fund shows '07

with 88 contributors or 32 per cent of the 273 on our class roll, with total gifts of \$4,355.25, or an average gift of \$49.50. This is an entirely creditable showing and better than most of the classes, aside from the 25- and 50-year classes, who, of course, were making special efforts. As class agent for the Fund I thank you for your response to this project, which is of the past. As you know, the similar present project for 1954-55 is already under way. I bespeak for it your loyal support, continued by those of you who have given in the past, and begun, I hope, by some of you who have not previously contributed.

Now get out your calendar for 1955 and note on it as "musts" the dates June 10-12 when we shall be holding our 48-year reunion at Oyster Harbors Club. Remember that when we were at Oyster Harbors in 1952, we voted to hold this 1955 reunion, and the dates were secured at that time and recently have been confirmed with the Club manager, Samuel A. Marx has been nominated by the Alumni Association as one of the alumni members of an M.I.T. Corporation Visiting Committee for the Department of Architecture. — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

• 1908 •

The fourth dinner meeting of the 1953-1954 season was held at the M.I.T. Faculty Club, Cambridge, Mass., on Thursday, May 20, at 6 P.M. with the following on deck: Bunny Ames, Jefts Beede, Bill Booth, Nick Carter, Myron Davis, Sam Hatch, Winch Heath, Bill Hunter, Stile Kedy, Harry Lord, Steve Lyon, Linc Mayo, and Henry Sewell. Les Ellis could not be with us as he was attending the 50th reunion of his class at Melrose High School, and Joe Wattles was in Hawaii, while George Freethy had another meeting and dinner at the Faculty Club. Following suitable libations in the Cocktail Lounge, while the gang was collecting, we adjourned to our private dining room for the usual excellent dinner. With Joe Wattles away we had no Kodachrome pictures, but for an hour or so after dinner we had a general "gab-fest" which was most enjoyable. Alumni Day, June 14 was another perfect day weather-wise. At the luncheon the following were on hand: Jimmie Burch, Nick Carter, Bill and Mrs. Given, Ted Joy, Steve Lyon, Linc and Mrs. Mayo, Miles Sampson, Henry Sewell, Charlie Steese and Frank Torole, while at the banquet at the Statler, Jefts Beede, Jimmie Burch, Nick Carter, Bill Given, Sam Hatch, Ted Joy, Steve Lyon, Bill McAuliffe, Linc Mayo, Henry Sewell, Charlie Steese and Frank Torole were present. The Class was honored in having Bill Given as the Banquet speaker, who spoke on "The Engineer in Management." Jimmie Burch keeps on the move as indicated by a card received in August from Pilot Butte Inn, Bend, Oregon: "Dear Nick, Another ring around the circle — *Super Chief* to Los Angeles, Lark to S. F., *Shasta Daylight* to Klamath Falls, Oregon, then motor through lumber country to Pendleton, Oregon, then *City of Portland* home. Saw Marciano-Charles

bout on my way home from Boston. Best regards."

We are sorry to report death of Clarence Clark on June 14. Since his retirement from the Du Pont Company, he had made his home in Hampton, N. H., with winters in Florida. He had been doing some consulting work for Arthur D. Little Company of Cambridge, Mass. Les and Mrs. Ellis were able to attend the Masonic funeral service at Hampton, N. H.

Jim McGowan kindly sent me the following clipping from the New York Times of August 18, 1954. "Adams, Mass., Aug. 17 — Hubert W. Flaherty former Adams selectman and superintendent of streets, who was prominent in business, civic and fraternal circles here, died last night in the Geneva City, N. Y., hospital where he had been a patient since last Thursday, his age was 68. Death was attributed to complications arising from the malnutrition and suffering he underwent while a prisoner of the Japanese for four and one-half years during World War II. Mr. Flaherty was a civilian aide to the Governor at Guam at the Island's capture shortly after Pearl Harbor. He was interned and held prisoner at Kobe, Japan until his liberation in September, 1945. He received his civil engineer's degree from M.I.T. He joined the government's nitrate and power development project at Muscle Shoals, Ala., during World War I . . . During his internment Mr. Flaherty was one of those assigned by the Japanese to broadcast to this country, stating how well he was being treated. That his radio text was not his own writing was readily apparent when family and friends met him after his release. Mr. Flaherty was a past exalted ruler of Adam's Lodge of Elks and served as vice-president of the Massachusetts State Elks' Association from 1932 to 1936."

Both Clarence and Herb were in the "Chemical Maid" with me during our freshman year and its hard to realize they have gone. The first dinner meeting of the 1954-1955 season will be held at the M.I.T. Faculty Club, Cambridge, Mass., on Tuesday, November 16, 1954 at 6 P.M. Usual notices will be mailed, but make your plans now to attend. How about sending us some news of yourself. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass.

• 1909 •

You may recall that the story of the fortieth reunion began with a message from Jim Critchett, who during Carl Gram's absence in England was elected acting president. Jim, now being president in his own right, again has kindly begun the year's notes with the following appropriate message: "Again a five year reunion has come and gone. How quickly they come and how all too quickly they pass! It was a fine representative group who got together at the Chatham Bars Inn. Some, I, at least, had not seen since graduation 45 years ago and it was good to renew acquaintance and talk over what had happened in the meantime. Others were those that by the fortunes of life we had seen more of during the intervening years and whom it is always a real pleasure to greet again. So now we are headed for the all important fiftieth, the reunion at

which the Class takes an important part in the commencement exercises at Cambridge. It will come all too quickly and should be the time for all classmates to make a very special effort to attend. Judging from the pleasure which those who were with us at Chatham enjoyed, I can assure you the effort is well worth while."

From the comments which we heard, it appears everyone agreed that Chatham Bars Inn fully met the descriptions contained in the folder as to comfort, appointments, and courtesy. It was located in a lovely spot and was ideal for the many informal gatherings that are a part of a Class reunion. To a large extent the weatherman co-operated well. The weather was fair, somewhat hazy at times, hot on the golf course, too cool for swimming, but comfortable for hiking and sitting on the piazza.

The first arrivals came Thursday and included Harry Whitaker, King and May Bullens, and perhaps others. Harry was there first, we believe, and as a member of the committee acted as official greeter, welcoming each of us as we entered the lounge to register. One of the most enjoyable experiences of the reunion was to stand by with Harry and help him welcome the new arrivals, many of whom we had not seen for years. Sometimes identification took a few moments for time wrought changes and an occasional introduction was necessary. However, in no time everyone knew everyone and became one large family. A large proportion of the Class arrived Friday and the dining room was well filled that evening.

Before and right after dinner, discussion groups met in the lobby and talked over old times. Later in the evening Muriel Dawes showed a series of Kodachrome slides taken during a trip to Europe which she and Chet had made recently.

On Saturday morning and afternoon the class members were engaged in several different activities. There were, of course, the golfers. King and May Bullens, George Wallis and Chet Dawes played at Eastward Ho, which is located not far from the Inn and at which several golf balls were lost. The Cy Youngs and Fishers played the local hotel course and we understand that they gave the Acushnet balls a vigorous workout. No scores of either match were posted! Others went on the local boat excursion along the shore. Some groups went on hikes and during the day discussion groups continued to occupy the piazza and lounge, probably settling some of the world's problems. During the morning a photograph of the reunion group was taken, which did not include the golfers who were absent. Later, Mex Weill took a separate photo of these.

The official class dinner was held Saturday evening. Immediately following the dinner a class meeting was held. Jim, who of course presided, first complimented the committee, Francis Loud, chairman, George Wallis, and Harry Whitaker, for their selection of Chatham Bars Inn and the care and detail with which they had planned the reunion. The Class is certainly grateful to them for their effort and hard work. Jim then called on the

Secretary for his report. First as to finances, the Secretary reported that on the death of Paul Wiswall the sum of \$124.48 was transferred from the Corn Exchange Bank to the Class Secretary. Voluntary contributions made by class members at the fortieth reunion and subsequently by one or two others amounted to \$325.00. The expenses of the reunion together with \$10.00 for flowers amounted to \$96.82. On February 5, 1952, the sum of \$352.66 was deposited in the North Avenue Savings Bank, Cambridge. Credit for interest and withdrawals for expenses, mostly stationery used for this reunion, made the balance \$304.95. (At the reunion four contributions of \$5.00 each and one of \$100.00 were received. Further expenses for the reunion amounted to \$65.15. Thus finally the Class has on deposit the sum of \$359.80.) Thanks to the generosity of individual members of the Class, it has always been possible to finance the routine activities on a voluntary basis.

The Secretary then called attention to the fact that Jean E. Clark, daughter of Horace and Florence Clark, who was voted a \$500.00 scholarship from the 1909 fund at the fortieth reunion, had just received her degree from the Institute and was present. She rose and expressed her gratitude for the assistance which the Class had given her. The Class is more than glad that it had been able to assist such a deserving student.

The Secretary stated that class statistics such as past and present membership would be included in the report of the reunion chairman. He went on to thank the members of the Class for their splendid co-operation in submitting news for the class notes and hoped that the good work would continue.

The President then pointed out that it is customary for the 50-year class to present the Institute with a substantial sum of money. Our fiftieth is only five years away and preparations should soon be under way. Accordingly, he appointed Art Shaw chairman of a committee to assume the responsibility for the fiftieth anniversary class gift. The other members of the committee will be appointed later. As you all know, Art is already class agent and class representative on the Council. The Chairman of the Reunion Committee was called upon to give his report. He stated that there were 236 degrees awarded to class members and 257 to others included in the class affiliation, making a total of 493. Of these 164 (33.3 percent) are deceased, 47 addresses unknown, making 282 living and addresses known.

Those present at the reunion were as follows: King, III, and May Bullens; Horace, I, and Florence Clark, and daughter, Jean; Henry Colson, IX; Howard, I, and Ruth Congdon; Jim, XIV, and Ruth Critchett; John, II, and Margaret Davis; Chester, VI, and Muriel Dawes; Tom, I, and Alice Desmond; Howard, II, and Caroline Fisher; Charles, I, and Alice Freed; Royce, XI, and Victoria Gilbert; Robert, VI, and Violet Glancy; George R. Harrison (Hon.); Derek, II, and Mary Hartshorn; Carlton Jacobs, II; Allen, II, and Helen Jones; Robert, III, and Catherine Keeney; Francis Loud, VI; Andrew, VI, and Anna Matte, and niece, Miss

Pauline Matte; Lewis, I, and Doris Nisbet; Joseph W. Parker, I; Chester, X, and Marcia Pope; Maurice, XI, VII, and Jeanne Scharff; Arthur, I, and Helen Shaw; Laurence, V, and Mrs. Shaw; Dwight, VI, and Glenna Sleeper; Henry, II, and Madge Spencer; Raymond, II, and Marion Temple, daughter, Mrs. Jean Hall, and granddaughter, Miss Patricia Hall; Albert, II, and Annie Thornley; Lockwood, I, and Helen Towne; George, II, and Marcia Wallis; Melville, II, and Helen Weill; Harry E. Whitaker, VI; John, II, and Mrs. Willard; Philip, II, and Edith Young. The total attendance was as follows: members of Class, 34; wives 29; daughters, 2; niece of deceased member, 1; granddaughter, 1; guest speaker (honorary member), 1; total 68.

Letters or messages were received from the following sending regrets and explaining why they could not attend: Thomas H. Atherton, IV; Seymour F. Barnett, I; Phil Chase, VI; Brad Dewey, X; J. C. Dort, I; Risdale Ellis, XIV; George Gray, VI; Freddy Green, VI; Earl R. Hamilton, XIV; George Haynes, VII; Mayo D. Hersey, II; T. F. Hickerson, I; Harold Lang, VII; Ken May, VI; Haylett O'Neill, VI; Gardner Perry, VI; C. W. Radford, I; Elmo A. Robinson, VII; F. H. Soderstrom, III; Steve Stephenson, X; Harold O. Stewart, VI. The following returned their registration forms, there being notations on a few of them: Adelaide M. Abell, VII; B. A. Bowman, I; John N. Boyce, II; Clarence J. Brown, IV; Ballard Burgher, I; C. H. Crawford, I; G. I. Emerson, XI; Jim Finnie, VI; C. N. Harrub, XI; Arthur E. Hartwell, II; Herbert S. Howard, XIII-A; Carleton W. Hubbard, II; Ralph E. Irwin, VI; Lewis H. Johnson, VII; Robert C. Latimer, II; John F. McCarthy, I; Russell Nichols, XI; S. H. Page, II; Samuel F. Perkins, V; Raymond J. Phelon, I; Edgar M. Post, I; Paul Remick, II; George Reppert, VI; Frank R. Schell, VI; F. Schneider, VII; George Weinhausen, II. Many of the foregoing sent greetings and best wishes.

The next order of business was the class election at which the present three class officers, Jim Critchett, President; Molly Scharff, Vice-president; and Chet Dawes, Secretary, were all unanimously re-elected — much to everyone's surprise.

The speaker of the evening, George R. Harrison, Dean of Science at the Institute, was introduced by Francis Loud. Dean Harrison graduated from Stanford in 1919, received his A.M. in 1920 and Ph.D. in 1922. In 1943 Northeastern University conferred on him the honorary degree of Sc.D. After teaching physics at Stanford he joined the Institute in 1930, became professor of Physics, and in 1942 was made Dean of Science. He has had a distinguished career, having served with the Office of Science, Research and Development and was chief of the optics division of the National Defense Research Committee. He told in simple language that all could understand of the recent developments in atomic and nuclear research, and how some of the results of this research are not only being applied to the fields of science and warfare but are also applicable to civilian life. The interesting and understanding manner in which he discussed the subject made a hit

with the ladies as well as with the men and he was accorded a hearty vote of thanks. On motion of Tom Desmond, it was voted that the speaker be made an honorary member of the Class. (The Secretary has officially notified Dean Harrison of this vote and he has replied, "I was highly honored by being elected an honorary member of the Class of 1909 and look forward with pleasure to being associated with this outstanding group." Chick Kane '24 of the Alumni Office is having a suitable scroll prepared.)

The evening was completed by a program of colored motion pictures. The first film by Cy Young showed the process employed at his Acushnet plant for making the famous Acushnet golf balls, as well as plastics. He followed with a "short" showing the antics of a pet monkey and dog. The Committee then showed a film, "Men and Science," depicting some outstanding leaders in science and many of the research activities at the Institute. A large part of the Class remained for Sunday dinner, after which the departures were almost unanimous, some remaining another day or two. The consensus was that the reunion was a grand success from every point of view.

Many of us, however, had opportunities to meet one another on Monday, Alumni Day. At the luncheon in DuPont Court the following were present: George Bowers; Henry Colson; Howard Congdon; Chet Dawes; Tom Desmond; Royce Gilbert; Francis Loud; Andrew Matte; Ken May; Art Shaw; Laurence Shaw; Henry Spencer; George Wallis; Mex Weill; Lyman Whitney; and Johnny Willard. According to our records, nearly all of these attended the banquet at the Sheraton Plaza with the addition of Herbert Palmer. The Class of 1909 did have some wonderful times in 1954.

In the July number of the Review we reported that Johnny Nickerson, II, had been honored by being made a Fellow of the American Society of Mechanical Engineers. At the reunion we learned that two other classmates, Harry Whitaker and Johnny Willard, for many years have had the honor of being Fellows in the A.S.M.E. Perhaps there are others in the Class who have attained similar rank.

We have already told of the fact that Phil Chase is vice-president of the United States National Committee, which is the U. S. representative of the International Electrotechnical Commission, and chairman of the committee that has made arrangements for IEC's Golden Jubilee Meeting in Philadelphia. It has not met in the United States since 1926. These notes are being prepared while attending the Jubilee at the University of Pennsylvania and it is unanimous here that the plans for both the technical and social events have left nothing to be desired. Phil and his committee have received many enthusiastic votes of thanks from both the United States and foreign delegates. Phil's wife, Theora, is one of the hostesses and we had scarcely entered our room when she brought in a vase of flowers, a token of hospitality on the part of the committee.

In addition to writing happy news, we, unfortunately, are also obliged to report obituaries. The Secretary was in Los

Angeles in June attending the A.I.E.E. Meeting when the notice of Dr. Compton's death appeared in the papers. He immediately wrote a note to Mrs. Compton, extending the sympathy of the Class and telling of the deep affection in which we had always held him. She replied and we quote in part. "Please know that my children and I appreciate your message deeply and are comforted by the evidence that he lives in the hearts of his host of friends and co-workers."

In the June Review we told of the passing of Mark Cole, II. During the summer his widow, Virginia, has been kind enough to send us more details concerning Mark. After Mark left M.I.T. he went to Barre, Mass., on a construction job, later became plant engineer at the Saco Lowell Shops in Lowell and while there purchased the Knowles Scale Works in the same city. During World War II he combined his screw machinery with that of a concern in Attleboro and finally ended with the Anson Motor Company, a Buick Agency. We quote in part from Mrs. Cole's letter: "He worked there the day he died and left work in high spirits. We had friends in for the evening and he seemed as good as usual—laughed and joked. Five minutes after they left, he complained of a pain in his abdomen. Four hours later he was gone, Feb. 25, 1954. I am grateful that he didn't suffer, but the void he has left will never be filled. On June 12, 1926, he married Virginia Voorhees of Jamesburg and Asbury Park, N. J. A son, Marcus V. Cole, was born in 1930 and a daughter, Charlotte V. Cole, was born in 1936. Young Mark graduated from Dartmouth in 1951 and is now in the Air Force. Charlotte graduated from Attleboro High School in June and has been accepted at three colleges. As you mentioned in your letter, Mark was well known and liked by everyone. He never changed, always kept his keen sense of humor, was a fine family man — husband and father, and all who knew him never could say anything unkind about him. I'm sorry I don't have part of the prayer our minister used at the church service, It described Mark perfectly."

We only learned of the death of Frank Lange, VI, from a letter to Jim Critchett from Frank's widow, Pauline, in answer to the reply form sent out by the reunion committee. We quote: "Frank J. Lange of 38 Washington Road, Springfield, Mass., suffered a heart attack Thursday, December 31, 1953, and died in Springfield Hospital. Burial took place in Oak Grove Cemetery. Mr. Lange was born in Springfield, Mass., and lived there all his life with the exception of four years spent at M.I.T. He attended local schools and Central High School. While in M.I.T. and Central his chief sport was fencing. For many years Mr. Lange had conducted his own real estate, mortgage and insurance business, but for the past 17 years had been in the employ of the Springfield Institution for Savings and had been associated with the mortgage and bond departments up to the time of his retirement at the age of 64. In his later years he had a most interesting and unusual hobby known as lamp-craft. He thoroughly enjoyed this hobby, creating

lamps from vases, antiques, and old oil lamps. Throughout his life, his ever amiable disposition won him a host of friends. He is survived by his wife, the former Pauline Weber of Springfield, a son, Frank T. Lange, of North Wilbraham, Mass., a sister, Hertha Lange of Springfield, and a granddaughter, Andrea Lange, of North Wilbraham. My family joins me in thanking you for your kindness and also the M.I.T. '09 Class." We in Course VI were always very fond of Frank and remember him particularly for his ever happy and pleasing manner.

We also learned through the reunion reply form of the death of Leland Clapper, I, at Van Nuys, California, on November 19, 1953. So far we have not been able to obtain any further details. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: HARVEY S. PARDEE, 549 W. Washington Street, Chicago 6, Ill.; MAURICE R. SCHARFF, 366 Madison Avenue, New York, N. Y.; GEORGE E. WALLIS, Wenham, Mass.

• 1910 •

Members of the Class attending Alumni Day this year were less than usual. Those attending were Jack Babcock, Roy Briggs and his wife, Bob Burnett and his wife, Merton Turnbull and his wife, and your Secretary. We enjoyed a fine time but all of us were disappointed that so few of the Class attended the festivities.

Charles A. Robb who has been chairman of the Department of Mechanical Engineering at McGill University has retired and is now in consulting engineering.

Malcolm B. Hall who has been director of the Training and Educational Division of the Foxboro Company has retired. He joined the company in 1909, and has been director of training since 1942. Under his leadership, the school originated specialized courses in advanced electronics, special training in textile, chemical, food, municipal and pulp and paper instrumentation, as well as professional forums to which leading authorities in specific industries are invited. More than acting in an advisory capacity at the school, Mr. Hall will continue his series of lectures, including his explanations of Automatic Control, a field with which he has been associated since the early development of modern process instrumentation.

Frank Hodges writes: "Somehow or other I seem to find more things to do now that I am retired than before, and so some of these things get overlooked."

I had luncheon with Jack Babcock and Hal Manson recently. Jack, who retired this June, has not had time to know whether retirement will agree with his dynamic disposition. However, Hal who has been retired several years looks fine and is enjoying life.

As your Secretary I have been reluctant to write of my endeavors with the exception of an occasional trip I take. However, I have had a very interesting business experience during the past month. My firm was commissioned to investigate the structural condition of the Old North Church, the signal tower where the lanterns were hung to advise the Colonials if

the British were to march by land or sea. A complete survey of the tower had been made on Friday, August 7, and on Monday an analysis of the structure was started. The next day a hurricane hit Boston and at one o'clock I received word that the entire tower had been blown to the street. I immediately went to the site and was greatly relieved to find there had been no loss of life, no one injured, and little damage to adjoining property. The tower will be restored and I hope I will be able to design a frame which will withstand the elements for several times the 140 years the previous tower resisted the weather. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston, Mass.

• 1911 •

These first class notes for the initial issue of the new volume of The Technology Review are being written here in Framingham as hurricane Edna comes close but fortunately in an easterly path to that taken by Carol so it looks like heavy rain and gale winds will be all we'll get. The August 31 hurricane did a lot of damage here and Sarah and I were at our summer place — Wellsweep, Cornish, Me. — that day and we lost three large trees, but fortunately damage to the house was not serious and nothing else was destroyed.

Shortly after our notes for the July issue were written in mid-May we were saddened to learn of the death of two Eleveners on successive days: Don Frazier, II, May 25 and Matt Black, I, May 26; closely followed by a third, Hal Jenks, VI, June 15.

In response to a letter of sympathy, Don's widow, Jess, wrote simply: "All I can say is that Don left when he was doing the things he loved." Having but recently retired from his work as resident secretary of the American Mutual Liability Insurance Company, Richmond, Va., Don left May 19 for Norfolk, Va., accompanied by Jess, for the statewide Safety Conference, for which he was general program chairman this year. There were over 2,000 present and it was a fine affair "and Don was so pleased that things went so smoothly." They left Norfolk on the 22nd for Williamsburg, Va., for the National Congress, Sons of the American Revolution, for which Don was registration chairman. The morning afterwards, upon arising, Don had a severe cerebral hemorrhage and was taken to a private hospital where he seemed to be responding to treatment, but the following night he took a turn for the worse and passed away at noon on Tuesday, May 25. "The funeral was from our church in Richmond on Thursday," Jess wrote, "with more than 500 there. I knew Don had heaps of friends, but never realized so many. They tell me there were more men there than folks could remember at an afternoon funeral. My sister arrived from New York Wednesday afternoon, and we left for Boston right after the funeral and had prayers at the grave in Lynn, Mass., Friday morning, May 28."

Jess later returned to their home at 328 Lexington Road, Richmond 21, Va., and says she is "carrying on as I think Don would want me to—with nothing but

happy memories—and my two sisters will soon be here to spend the summer with me."

Born in Annville, Pa., in June, 1883, Matthew B. Black, I, was found dead in bed on May 26 by his wife, the former Sarah Stobler, at their Annville home. Black prepared for M.I.T. at Westchester State Normal School and attended the University of Pennsylvania for two years before joining us. He was a member of the Civil Engineering Society. He had been employed by the Pennsylvania Highway Department since 1918 and for 15 years prior to his death had served as an engineer for the New York-Pennsylvania Inter-State Bridge Commission. He was a member of the Lebanon Moose Lodge and the Union Hose Company of Annville; was secretary-treasurer of the Pennsylvania Society of Professional Engineers; a member of the Lebanon County Civil Defense Council and the American Society of Civil Engineers. In addition to his wife he is survived by a daughter, Mrs. Kathryn Heisey, and granddaughter, Susan, of Bethlehem, Pa., and a brother, Hugh Black.

Born at Melrose, Mass., in November, 1888, Harold Gould Jenks, VI, prepared at Melrose High School. He died at the new home he and his wife, the former Marion Perley, sister of George Perley '14, had recently established following Hal's retirement last year.

In his undergraduate days, Hal was a member of the 1911 tug-of-war team his first two years; in the Tech Show chorus as a sophomore; a class cross-country team member his first two years; a director of the Technology Cooperative Society for three years and president in his senior year; also an active member of the Electrical Engineering Society. Following a long period of service with the Cambridge Electric Light Company, Hal closed his professional career with a long term as distribution engineer for New England Gas and Electric Association, also from Cambridge, he and his wife living for many years in Newton Centre. Interment was in the Newton Cemetery in Massachusetts.

These three active classmates will be greatly missed by us all and our sympathy has been expressed to the families of each.

We had 14 Eleveners, two wives and one son, present at this year's annual Alumni Day, June 14. Favored by excellent weather, we had a fine turnout and most enjoyable opportunity to reminisce at the luncheon in the Great Court at M.I.T. John Alter, IV, and O. W. Stewart, I, were present with their wives, plus the following stags: Obie Clark, II; George Cumings, VI; Monk deFlorez, II; Dennie Denison, VI; Henry Dolliver, I; Cal Eldred, VI; Tom Haines, II; Fred Harrington, I; John Herlihy, II, whose son, Jack, '39, joined his dad from Chicago; and Aleck Yereance, XI. At the banquet in Hotel Statler, Boston, Carl Richmond, I; Emmons Whitcomb, X; Henry Martin '07, who graduated with us; and Clark, Cumings, Denison, Dolliver, Harrington and Herlihy made up the 1911 table. We also had a "call" from our honorary member, Senator Tom Desmond '09 of New York, and your Secretary led the songs and cheers, as usual.

Admiral Luis deFlorez, our 1911 pioneer in aviation, now in his 43rd year of flying, received special permission once again to land his Grumman amphibian on the Charles River Basin and arrived just before noon to join us for lunch, returning to New York, where he heads his own consulting engineering firm, in mid-afternoon.

All the joy of Alumni Day was soon succeeded by deep regret eight days later with the death of our beloved Dr. Karl Taylor Compton, former president and chairman of the board of M.I.T. At the memorial service held on June 25 in the Great Court, where, on June 6, 1930, Dr. Compton was inaugurated as the ninth president of Technology, your Secretary officially represented 1911. It seems most fitting that 1911's eulogy to Karl Taylor Compton be the tribute publicly paid him by Dr. Carl S. Ell, XI, president of Northeastern University: "I am deeply grieved to learn of the passing of Dr. Karl T. Compton, who has been such a distinguished figure in the field of science and engineering in our time. His important contributions to our community and national well-being, his stimulating leadership in higher education, his readiness to help others who appealed to him for counsel, his warm personal qualities, brilliant mind, and gracious manner endeared him to an ever-widening circle of friends."

Of course you all noticed on page 481 of the July Review that our illustrious classmate, Bob Haslam, X, was honored by election as a life member of the Institute Corporation.

In mid-August I experienced one of those great joys that warm the heart of a Class Secretary—receiving a letter from a classmate for the first time since graduation! Ralph Holbrook, X, 14 Maple Avenue, Beacon Falls, Conn., wrote: "This, I believe, is the first written communication with which I have bothered you since 1911 — 43 years! Well, I'll promise that you'll hear from or of me before another 43 years elapse — so let me bring you up to date. "Prior to 1930, my activities proved to be background and preparation for the subsequent period. In that year I joined the Sponge Rubber Products Company of Shelton, Conn., then a tiny but ambitious organization. Object: to see what technology could do for the then infant sponge rubber industry. By the late 1930s we had become the largest producer of blown sponge rubber in the world, having duplicated, but on a mass production basis, the soft sponge rubber previously made only by a couple of German firms in small amounts by carefully-guarded secret methods. Some persons insist that a certain '11-er was involved to some extent in this and other developments. Rank partisans, no doubt. In 1948 I gave up active participation, retaining contact on a consulting basis. This permitted winters in Florida and, during the balance of the years, the travel to which my wife and I had looked forward."

Beating the gun on retirement was timed most fortunately, for the end of the road for my wife came last summer. In late February I relinquished my official title, retaining a directorship, thus fully retiring. My best regards to you and the classmates — I think the 1911 class notes

are outstanding and that without your supervision, Dennie, the Class would not have retained its solidarity."

Thanks a lot, Ralph, I have high hopes this will inspire others to "Write to Dennie!" With his letter, Ralph enclosed a clipping showing that B. F. Goodrich Company has just acquired the assets and business of Sponge Rubber Products Company, in exchange for 179,000 shares of B. F. Goodrich common stock, \$10 par value. The business will be operated as B. F. Goodrich Sponge Products Division, with plants in Shelton and Derby, Conn., and Fall River, Mass., and a Canadian subsidiary in Waterville, Quebec, Canada.

G. Arthur Brown, X, writes that due to policy changes, it has been decided to close the Leather Tanning School at Pratt Institute in Brooklyn and he, having run this school for a number of years, has been invited to join the staff of the Leather Engineering Department of the Lowell Technological Institute (formerly Lowell Textile School) in Lowell, Mass.

"I will start work at Lowell on September 1 and have a new home on Pawtucket Boulevard, Tyngsboro, Mass. Both Hazel and I are looking forward to living in New England again and I hope to be able to attend some of the 1911 get-togethers in Cambridge." We'll sure be glad to have you in the 50-mile Boston area, Arthur.

In mid-July I called one Sunday at the Glazier home—Ledgewold in Lincoln, Massachusetts—and found both Gordon, VII, and Gertrude out, but a few days later I had a letter from Gordon, dated Vredenburgh, Ala., explaining that he was down there and Gertrude had been away for the day, but found my card on her return and advised him. He enclosed a clipping from the *Alabama Lumberman* for July, which said, in part: "On June 29 the capital stock of Vredenburgh Saw Mill Company was transferred to three purchasers — International Paper Company, Hollingsworth and Whitney Company, and an investor not formally identified. With L. Gordon Glazier, executive vice-president of Hollingsworth and Whitney Company as managing agent, the new owners took possession on a tenancy in common basis and restyled the operation Vredenburgh Alabama Properties."

"As a considerable volume of the Vredenburgh timber is mature and overdue for harvesting, the new owners will expedite cutting to avoid loss from deterioration, it was indicated. This, it was implied, will afford more timber than the Vredenburgh mill can handle, making it feasible to sell logs or stumps."

In conclusion, Gordon wrote: "What's this epidemic I read in The Review about all these old 'gaffers'? How do they get that way? Probably too much golf — I never played it. I did decide last fall, though, that maybe I had earned a little relaxation, so I bought a plane and learned to fly it. Much safer than golf! Happy days to you and yours and come again to see us at Ledgewold!"

Bill Coburn, XI, presents more news from his Blue Chip Farm: "Over the Fourth of July week end we took five of our saddle horses up to Chester, Vt. for a two-day show there. We were especially interested in this show because Frank

Bradshaw, one of Kentucky's best horsemen, was the judge. In the first class, Mare and Get, we showed one of our brood mares with a weanling colt and a yearling colt — won the Class and got the Blue Ribbon. Then in the Colt Class, our yearling colt, Poppy's Genius, won the Blue Ribbon; and in the Colt Stake Class the same colt won the championship. So in the three breeding classes we won two Blue Ribbons and a Championship. In the five-gaited Class we got in the Open Class and won the Championship in the Stake Class, so our total winnings were one Yellow and two Blue Ribbons, and two Championships. This was our first show with our new trainer, who we brought up from the South."

A nice letter at hand from Mark Curtis Kinney, IV, President of The J. S. Ringwalt Company and a Vice-president of The First National Bank of Mount Vernon, Ohio. "You never seem at a loss for copy for 1911 notes," he said, "but as you have several times mentioned the painters in the Class, I submit the record of a 'one-man show' in the Kinney family." (A leaflet listing 15 portraits — "Paintings by Irene Kinney" — as exhibited May-June, 1954, at The Village Inn, Gambier, Ohio, was enclosed.) "I've had my nose to the grindstone so long that I've never been able to follow the precepts of Ross Turner and the other good men in Course IV, who put our classmate John Taylor Arms on the road to fame, but I'm very happy that my wife, Irene, is doing what I've never seemed to have the time to do. Gambier, Ohio, is where Kenyon College is located, which I attended before going to M.I.T. My son, Mark, didn't follow in his father's footsteps. After being in the service he went to Yale and graduated in 1950."

Did you notice the "quotable quote" by our General George C. Kenney, I, in the July *Reader's Digest*? It read: "Air power is like poker. A second-best hand is like none at all — it will cost you dough and win you nothing." George is still making many public appearances as he travels around the country in the interests of the Arthritis and Rheumatism Foundation, of which he is president. An AP story on a speech he made in Omaha, Neb. August 9, stated that: "Air Force General George C. Kenney today forecast 'world chaos that will parallel the breakup of the Roman Empire' if World War III breaks out and Russia is defeated." He told the Air Force Association, in convention, that, in such a circumstance, it will be up to America's military reserve forces, in great part, to help restore world order. George also said that if the U. S. survives World War III and the Soviet empire collapses, satellite nations will break away and split into warring entities, all trying to carve out boundaries of their own, with this country the only one capable of handling the resulting problems. Roy MacPherson's wife, Ina, (They are real oldtime Framinghamites) said she was in Waterbury, Conn., one day just after Labor Day and found that George Kenney was due there that evening for another public appearance.

Armand Peycke, II, an executive of Valley Bearing and Equipment Company in Chicago, writes: "Spent three

months in California this past winter, but am back pushing our railroad equipment division with some new products that look like acceptable improvements for railroad service. Our company, as industrial and railway supply representatives, sell the products of seven AAA companies, some nationally and the balance in midwest territory, and we are enjoying hard work and having fun. Note John Wilds has now retired to his old home in Darlington, S. C., but comes here for directors' meetings. Hope you are happy in your new location and setup, Dennie." Thanks, Armand, it sure is great to be "back home" in Framingham. Had a nice call one evening in early July from a fellow "summer bachelor" and Framingham High School classmate, Henry Dolliver of Belmont, Mass., who is still carrying on with Jackson and Moreland, Boston. His wife was spending the summer at their place in Sanbornton, N. H., (on Lake Winnisquam near Laconia). He said he has just completed a Dolliver family history and is about to issue it in multigraph form.

My eagle-eyed fellow Class Secretary, Cac Clarke '21, sent me a late July clipping from the Newark (N. J.) Sunday News, titled "Small World Department." It told of a Mr. and Mrs. Theodore Calhoun and their youngsters of Maplewood having their sailboat rudder break while sailing in choppy, windswept Barnegat Bay. "They were drifting toward some rocks when the skipper of a cabin cruiser noted their plight," the story continues, "and with a megaphone yelled instructions and then threw a line and towed the disabled craft back to shore." The skipper turned out to be our Bill Orchard, I, also of Maplewood and a trustee of the Orange Hospital Center. Mrs. Calhoun was chairman of a charity show for the institution last May, but this was the first time she and Bill had ever met.

It's so nice to hear from Frank Osborn, III, that he is once again in fine health and returned to his work with Andes Copper mining Company, Potrillos (via Chana-ral), Chile, South America, on September 3. Don Stevens, II, and Lois had the pleasure of finding Bun Wilson and his wife and daughters guests at Snow Inn, Harwichport, on Cape Cod, when they visited there in mid-July with their daughter, Lois Streett and granddaughter, Lois Cassandra Streett. Later I heard from Bun how pleased they were at the meeting with the Stevenses and still later (August 30) heard from Don on a White Mountains tour. Our Admiral Luis deFlores, II, was one of seven alumni who were instrumental in establishing a Jerome C. Hunsaker '12 Professorship in Aeronautical Engineering through a \$275,000 endowment by the aircraft industry. We were also glad to see Monk appointed a member of the Corporation Visiting Committee for the M.I.T. Libraries, while Ralph T. Walker, IV, continues as chairman of the alumni association-sponsored Friends of M.I.T. Library Committee.

Henry Martin '07, who often joins us at reunions, having secured his degree with us, wrote saying he had recently completed quite an undertaking at Andrews Air Base — a report on conversion of 12 heating plants from coal to oil, at an

estimated saving of \$360,000 over a three-year period. Burleigh Cheney, II, operating from PO Box 62, Boston 17, Mass., represents McMillan and Associates, Inc., of New York, Boston and Cleveland, brokers for small to medium sized manufacturing and wholesale businesses, specializing in capital gains opportunities and retirement propositions. Weekly at Framingham Rotary Club meetings it is nice to see Dr. Theodore S. Golden, son of Louis R. Golden, VI. Ted is an infants' and children's specialist and a very personable and pleasant young man.

Once again 1911 was up among the leaders in the Alumni Fund campaign, which closed June 30. We were second in percentage of class contributing — with 35 percent (31 percent a year ago) against 36 percent for the 50-year class, 1904 — with just over \$3,000 contributed for an average contribution of \$26.40 (up just a dollar over 1952-53). Eleven Eleveners contributed \$50 or better, with one \$300 gift, two \$200s and four \$100s at the top. As Class Agent: "Thanks for the continued fine work, classmates!"

Here are some address changes: Austin W. Brooks, VI, Box 112, Skyland, N. C.; George A. Cowee, III, South Merritt Island, Fla.; Richard H. Gould, XI, 234 Hollywood Avenue, Douglastown, L. I., N. Y.; and Louis Grandgent, IV, Public Housing Administration, Peachtree-Seventh Building, Atlanta, Ga.

Traditionally we hold our Annual Class Dinner at M.I.T. on the seventh day of the eleventh month, but this year we plan to have this "Seven Come '11" Dinner on Saturday evening, November 6 at 6 P.M., so if you can get to Cambridge that evening drop in at M.I.T. and join us in our annual get together. — ORVILLE B. DENNISON, *Secretary*, Chamber of Commerce, Framingham, Mass.; JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

Snow Inn at Harwich Port was again the scene of a reunion of the Class of 1912. This 42nd year reunion began on Friday afternoon, June 11, and was attended by the following men with their wives: A. F. Allen, H. W. Codding, J. A. Cook, Page Golson, H. G. Manning, J. H. Pratt, J. W. Raymond, C. K. Reiman, C. B. Rowley, F. J. Shepard, Jr., and L. M. White. The W. J. Murrays came with their son W. S. Murray. H. E. Dexter was there with his daughter Carolyn. R. J. Wiseman and E. R. Schell came alone. The total attendance was 29. The party was housed in cottages near the shore which afforded ample assembly space together with privacy from other guests. It was a very happy arrangement and contributed to the enjoyment and pleasure of all. The meals at the main house were superb, as usual. Lobster was the principal choice for dinner Friday. In the evening we all gathered in the cottage living room and exchanged news of what had taken place since the previous reunion.

On Saturday morning, the Carl Rowley's entertained a group at their cottage nearby. The feature on this occasion was a demonstration of dowsing by Carl, who claimed he had the gift of locating water invariably with his forked twig. Some of

the others also appeared to get a reaction at the proper spot over the water main but the skeptics remained unconvinced. Many of the ladies went antiquing in the nearby towns. The rest of the group enjoyed the recreational facilities of the Inn, or held informal reunions. A cocktail party, with plenty of lobster and other delicacies, preceded the Class Dinner on Saturday evening. Eric Kebbon sent deep regrets from Stonington, Conn., that he could not join in celebrating our 42nd year reunion, but sent best wishes and warmest regards to all. Pie Cummings from Connersville, Ind., had hoped to be with us but last minute complications prevented. He sent greetings and best wishes. He is retiring August 1, and may be able to get about and call on some of the members of the Class in the not too distant future. Harold D. Mitchell of Buffalo, N. Y. sent good wishes to all of the 1912 men present at the reunion. He was sorry that he could not join this year but hoped to in 1957. C. Bolmer Vaughan regretted that he would be unable to come but sent best regards and best wishes. On Sunday morning the party began to break up and after lunch most of the members left. Some went to their homes, but others went to Boston to attend the Alumni Day events on Monday. A wonderful time was had by all those attending. Each successive reunion makes a deeper and more lasting impression on the participants. We are all looking forward to a larger attendance at the 45th reunion to be held in 1957 at Snow Inn. We hope all 1912 classmates will make a special effort to attend.

Jim Cook sent in the following in July: "I spent the long weekend of July 4 at Cold River Camp, Appalachian Mountain Club. The location is at the Maine-New Hampshire State line, a couple of miles south of Evans Notch. It is a beautiful spot. At dinner, four sat with Hildur and me at the table. All Appies seem familiar, but it takes a while to recall the names of campers seen years ago and to learn the names of new friends. The conversation led to Boston to Cambridge, to M.I.T., to classes. Sure enough, the pleasant chap with the mustache was Walter P. Green '12, Course I. We had quite a talk fest with Walter and his wife. The Green home is in Waterbury, Conn. The Greens are in the Harwich Port class photo of 1952. One Clinton H. Colleston, an Amherst graduate of years ago, was at the same table. We found later that he plays a vigorous and skillful game of tennis. He was interested in the conversation about M.I.T. as he taught English at the Institute from 1904 to 1916 with Professor Arlo Bates. A great light burst in my mind as I recalled that he taught freshman English to my group. I was even more argumentative in those days than now. I held onto an opinion in class and defended it more stubbornly than wisely. One day Mr. Colleston requested my presence after class. He told me pointedly, 'Mr. Cook, I want you to know that you are very susceptible to adverse criticism.' He was right, I still am and avoid criticism when it can be honorably dodged. However, Clinton had no memory of this incident, one of thousands in his experience. It proved most pleasant to meet him again."

Mrs. Helen Pedersen, while visiting in New Britain, Conn., phoned Helen Manning that she was very happily situated in her new apartment No. 324 at 4545 Connecticut Avenue, Washington, D. C., which is near a shopping center and is fully air conditioned. Harold Manning also reported that an excellent picture of Fred Barker appeared in a late July issue of *Life* magazine, but gave no other details. The Barkers were unable to attend the reunion.

Lester White is retiring again on September 1. He plans to go to Europe in the fall and later select a warmer climate in which to live. As he will have no permanent address for quite a while, you are requested to send news items directly to Fritz Shepard or Ray Wilson. — FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston, Mass.

• 1913 •

We have seen everything now. Carol and Edna, the Hurricane Sisters surely gave us here in New England a bad time. What damage one did not cause the other did, so many of our shade and fruit trees have been demolished. We hope you have had an enjoyable summer. Bob Tullar states, "Here's a buck for my dues. Not much news however. Looking forward to our next session at Osterville. Still with RCA in Camden, N. J., and expect to retire on schedule and in time for the '55 meeting. Good Luck and best regards." E. E. Smith of Lima, Ohio, sends a very interesting letter together with a clipping about Smith published by the *Lima News*, and I quote: "The enclosed clipping will illustrate what E. E. Smith of the Class of 1913 is attempting to accomplish. Last July to the Department of Water and Sewage Treatment was added the Department of Garbage and Refuse Disposal, making the Department of Utilities. The same provided a new title with a continuous headache. January of 1954 shows my native town under the antagonistic legislation of a brand new City Council anxious to undo whatever they thought necessary. Imagine my enjoyment! William Edward Smith, aged four, may still look to M.I.T. as a future goal. His engineering interests at present are restricted to the Pennsylvania, B.&O., Nickel Plate, Erie and D.T.&L., whose railroads insect at Lima. You might guess that I have no thought of California or Florida" unquote. By the way, E. E. is the utilities director who proposed to raise the median sewage rental from \$4.36 to \$10.72. Some boy this Smith. Received a very enlightening letter from our old classmate Henry G. Hoornbeek of LaTourelle-Rockville, A.M., France. He relates we challenged him with our letter. He sent a dollar. His present outlook on life is rather sad due to ill health and the death of his dear wife. He lives in a beautiful villa in a beautiful setting and in a wonderful climate. To quote: "What do I do to keep amused? Ordinary living takes some effort. I study languages. At the moment I am working on Dutch or, as they call it 'Mederlands.' And I paint: oils, water colors, and so on. Should anyone from the 'Stute come down this way he might look me up. I have a car and know the country quite well. This is not a com-

mercial, by the way." Well, Henry, I believe that you should be envied in your mode of life.

Bob Bonney came to life with a short note. "No particular news except that Mrs. B. and I were presented with our tenth (10th) grandchild last Friday by my daughter, Emily. The grandson Gerald Scott Couper of West Orange, N. Y." Speaking of Bonney, your Scribe and wife, Roz enjoyed a 10 days trip by auto through Central New York, Pennsylvania, West Virginia, Virginia to Williamsburg, Va., and returned by way of Washington, Delaware, New Jersey, to New York City where we visited our oldest daughter, Janet. Oh yes, one of our greatest enjoyments was the weekend we spent with the Bonneys on their plantation of 170 acres with 150 odd black angus cattle, together with almost every kind of vegetable, fruit, and nuts. Any of you travelers who should pass through Elkton, Maryland, should stop and see the Bonneys. You will never forget their hospitality. I know we never shall. W. C. Purdy of 1223 Herschel Avenue, Cincinnati 8, Ohio, writes a very interesting letter. He accepted our challenge and we quote in part: "My dream, no, my purpose is to complete a summary of the activities of Tubificid worms, their presence in certain streams studied, and the results of their work in large Lab-Controlled Cultures. This will be my Swan-Song for the U.S. Public Health Service in which I have served for many years. My chief difficulty: I have to work slowly in this writing, due probably to my age, (Am about 83)." Good Luck, Bill, We wish you every success in your latest accomplishment.

P. B. Terry imparts volumes of news. He is residing at 47 Lazell Street, Hingham, Mass. Well, it was with much pleasure that I read a blast from the dark ages from our old cartoonist Dave Nason. He is still with J. Laskin and Sons, Corporation, Lambskin Tanners and Dyers. We hesitate to publish all of his verbiage, but for what is printable: "Speaking of retirement, I tried it experimentally in 1950. It was no good then, which makes me more than a bit skeptical now. At that time I successfully retired my wits, but not the carcass. Now my legs crave retirement, but not my mind. In any event, I expect to start feeding pigeons within a year, which I read has already become the active pursuit of many of our class-mates.

"As you know, I have been, except for a brief interlude in 1930, in the leather business for over 40 years. I am apparently going to escape with my companion in life, two daughters and good health, which, from my point of view, is sufficiency in itself." Signed "Dave" President. We have been informed that our classmate Everett St. John of Danielson, Conn., has been appointed to the Board of Directors of the Danielson Manufacturing Company. He received his AB in 1910 from Harvard and an SB at M.I.T. in 1913. He has just completed 40 years of service with the Bell Telephone Laboratories, developing telephone apparatus as well as radar bomb shells and signal corps equipment. Well done, you Son of Tech. Just a note from Burton L. Cushing but no

news from our pal from Rockland, Mass. Earle R. Lincoln of Holberg, B. C. Canada sends "Kind Regards." Herbert B. Cady, chief naval architect at Electrical Boat Division of General Dynamics Corporation retired after 40 years of service with that firm. He played a leading role in the development of submarines from a tiny K boat to the atomic-powered Nautilus as well of the construction of four submarines for the Republic of Peru. Herb, we offer our congratulations for your outstanding accomplishments.

Al or Professor Townsend as the head of Lowell Institute writes of several visits from handsome Jim Russell of Milton. He also states that he received a telephone call from George Clark, who is associated with Formica Company of Cincinnati. Several of Al's students bring news of Ed Cameron. Al attended the annual meeting of the American Association for Engineering Education at the University of Illinois in June. Fred Lane writes from 37 Lee Street, Bel Air, Md., that although he has reached the usual age of retirement he has not the nerve to retire. He has received his 30 year pin from the Army and he has been with the Chemical Corps for over 25 years as a chemical engineer with federal service of nearly 34 years. He will soon retire to Florida. Edgar W. Taft, a native of Gloucester, Mass., now of Winchester, Conn., spent a year on the instructional staff at the 'Stute, then in 1916 secured an engineering position with the Asbestos Shingle Company. He moved up as purchasing agent, then assistant to the president. Later served as assistant treasurer, on to the treasurership. From here to become treasurer and a director of the Western Cartridge Company and then in 1944 became the treasurer and director of the Olin Industries. His latest honor is that of co-chairman of the American-Korean of greater New Haven. What is next, Ed?

Ralph L. Thomas of Baltimore, Md., has withdrawn from the Board as vice-president and executive engineer of the Consolidated Gas, Electric Light and Power Company. He served as an engineer in the First World War and several years with the Pennsylvania Water and Power Company until he became associated with the Consolidated. Ralph has memberships in many engineering societies both locally and nationally. Bravo! Brother Thomas. Joe Cohen sends best wishes and kindest regards. Well, our old friend Tom Collins has finally settled in our midst at 91 Clapp Road, North Scituate, after 37 years as production superintendent of the paint division of the Pittsburgh Plate Glass Company, Newark. Welcome home, Tom, we hope to see more of you. You all received Bill Ready's letter of May 24. If you have not received your copy, we shall see you receive one, it is quite worth while. I have just finished a most interesting phone call with Bill. Am glad to report he is again brimming with good health. We report with a great deal of regret of the passing away of our classmate Ignace D. Schilowsky on the 25th of April in Washington, D. C. Our sincere sympathy to our departed brother's family. We are in receipt of a most unusual missile from Hildy Carlson in which he used our circular let-

ter and wrote line for line between the lines of our letter. We are unable to read most of what he was trying to prove. We are able to decipher that he went to Seattle about June 1 to attend the Rotaries International and, of course, he became the president of the Boston Rotary Club, July 7, and extends to all 13'ers an invitation to attend the meeting any Wednesday at 12:15 noon at the Hotel Statler. Good Luck, Hildy, but please confine your writings in the future to a typewriter.

Received a note from Ken Franzheim thanking your Scribe for sincere invitation to entertain Ken when he visited Boston for the Architects Convention. But sad but true, Ken never reached Boston. We are indebted to Don Severance, Alumni Secretary, for really big news: H. Kenneth Franzheim has been nominated as one of the alumni members of an M.I.T. Corporation Visiting Committee for the Department of Architecture. Once more our congratulations to you Ken. Mere words can not express the sadness that filled me to overflowing when a letter was received from Arthur Hirst relating the horrible news of the passing of one of the most loyal classmates and loved by all who knew her, Dr. Louisa Norton or better known to most of us as Effie MacDonald. Effie lived a very full and humane life. She held degrees from Tufts Medical School, M.I.T., Radcliffe and University of Illinois. May the thoughts of this great woman with her ever ready smiles, good nature, and wit be an example for all who may feel they have troubles and suffering. God bless our Effie and preserve her soul. With these sad but thankful thoughts we shall bid you all the best of health and happiness. — FREDERICK D. MURDOCK, Secretary, Barrington, R. I. GEORGE P. CAPEN, Assistant Secretary, 623 Chapman Street, Canton, Mass.

• 1914 •

June at M.I.T. is always a busy month. This year was especially so, since it included our Fortieth Reunion. Those who attended seemed to sense the real importance of the event, which is well summarized in the *Time* slogan of "Time Marches On." The really big day of the Institute program is Alumni Day. This event, held on June 14, is the climax of numerous other meetings. There is the Corporation Meeting, Alumni Fund Class Agents Meeting, Alumni Honorary Secretaries Meeting, and numerous society and fraternity meetings. This year, because of our own impending reunion, it was decided not to hold a special class pre-reunional gathering. We did, however, join in the general pre-dinner cocktail party. It was noted that the following Fourteeners attended this gathering and the alumni dinner or were present at the alumni luncheon: Crocker, Fales, Gazarian, Hamilton, Mayo, Morrison, Morrill, Swift, Tallman, Taylor, and your Secretary. Atwood and Peaslee had bought tickets but at the last minute were not able to make it.

The real event was our Fortieth Reunion held at the Sheldon House the next week end after Alumni Day. The weather was perfect. Mayor Roy Parsell of Pine Orchard certainly knew just what to order from the weather man, as well as general

facilities. Those attending seemed to think that it was the best reunion ever. Facilities included sailing, motorboating, golfing at the superb New Haven Country Club, golfing for the duffers at Pine Orchard, and just grand service and hospitality from Mr. Graves and his staff at the Sheldon House. A toast was drunk to the memory of Porter Adams, who through his will provided the cocktails on Friday evening. George Tonac at the piano furnished songs which took us back nearly half a century, as well as new ones written for the occasion. It can safely be said that a wonderful time was had by all, but with the regret that more could not have made it.

We missed several who had been regular attendants at previous reunions. For example, Ralph Bates was on his way to Iran; Harold Bent, who is superintendent of works of the Newport News Shipbuilding Company, had the responsibility of the commissioning of the new aircraft carrier *Intrepid* at the time of the reunion; Rucker Bristow of Clinton Foods of Florida had to be in California — of all things; Ralph Salisbury, who had been in Europe with the Army, just did not arrive back in time; Frank Ahern had to start off on one of his national park tours for the Department of Interior; Arthur Johnson of the State Mutual Life Insurance Company had a conflict because of a convention; Chet Corney was stuck on that week end, as he was in charge of the Boston Edison Company's operations at that particular time; Al Devine of the Massachusetts Motor Vehicle Registry had to attend a National Safety Conference; Leigh Hall, Rotary member of Concord, N. H., was one of the visiting Rotarians who journeyed to California. Anyway, nearly 50 of us who made it had the best reunion ever. Those who did make it were: Affel, Ambler, Barratt, Blakeley, Borden, Chase, Chatfield, Crocker, Davis, Dawson, Derry, Dinsmore, Fales, Faunce, Fiske, Gazarian, Giffels, Gould, Hadley, H. H. Hall, O. C. Hall, Harper, Isaacs, Kerr, MacCart, MacLeod, Mann, Mayo, Moorehouse, Morrison, Mudge, Ober, Owen, Parsell, Peaslee, Perley, Perry, Rauber, Reber, Richmond, Smith, Somerby, Spitz, Townend, Trufant, Waitt (who came up especially from San Antonio, Texas), Wyld, Zecha.

One familiar and always smiling face was sadly missing. It was that of our Assistant Secretary and Class Agent, Ross Dickson. As has been cited before in these notes, Ross had been in poor health for nearly three years and confined to his bed for nearly a year. A splendid, and what proved to be a final, message from Ross was read at the reunion. Ross died three weeks later on July 9. Born in Albany, N. Y., Ross's boyhood home was in Amsterdam, N. Y., where he prepared at the Amsterdam High School. At the Institute he was a member of both the Chemical Society and the Mechanical Engineering Society, serving as president of the former. Musically inclined, he was a member of the Combined Musical Clubs and was vice-president during his senior year. He was a member of the Mandolin Club all four years and also served as its manager. In his junior and senior years he was also a member of the Banjo Club.

Practically all of his graduate life was spent in New York with the Standard Oil Development Company, of which he served as assistant secretary. He was also vice-president of the Petroleum Distillation Corporation. His specialty was in the field of patents and intercompany contracts. In World War I Ross was a captain in the Ordnance Corps, serving with the Toluol Unit of the Explosives Section. He was an active Mason, and his hobby was amateur astronomy. He is survived by his wife, the former Marian L. Nellis, and two daughters.

As it was known at the time of the reunion that Ross was unable to carry on the work as class agent, Herman Affel was elected to that position and also to that of assistant class secretary. Charlie Fiske will continue as president and your Secretary will also carry on.

On June 22, Fourteen lost another very real friend in the death of Doctor Compton. It had been your Secretary's privilege to know Doctor Compton intimately. We had both served as trustees of Norwich University and made the trip from Cambridge, Mass., to Northfield, Vt., together to attend Trustees' meetings. He was your Secretary's National Defense Research Committee advisor when your Secretary was in charge of the Guided Missiles Division during World War II. No one who became closely associated with Doctor Compton could fail to appreciate his greatness and his wonderful sense of humor. After Alumni Day and just as he was leaving on his fatal trip to New York, he sent your Secretary a short memorandum saying he had noted how quiet Fourteen was at the Alumni Dinner and that perhaps we were growing up!

Did any of you note the advertisement in *Business Week* of Holmes and Narver telling of their unique construction of the Eniwetok Pacific Proving Grounds? Jim Holmes is now a partner of one of the largest construction firms on the Pacific Coast. He has also been a very generous contributor to Technology, including scholarship funds.

A recent issue of the *New York Times* told of the announcement by Mr. and Mrs. Ralph Perry of the engagement of their daughter Janet to Lt. Herbert Newton Townsend, U.S.N. Janet graduated from Connecticut College and received her masters degree from Harvard University this June. Part of her graduate work was taken at M.I.T. Ray Dinsmore, Vice-president in Charge of Research and Development for the Goodyear Tire and Rubber Company, received a 40-year service pin at a very impressive testimonial dinner on July 6. Earlier this year Ray was elected a five-year term member of the M.I.T. Corporation, also president of the American Institute of Chemists and a Director of the American Institute of Chemical Engineers. In 1947 he was awarded the Colwyn Gold Medal in London by the Institution of the Rubber Industry in recognition of his work in synthetic rubber research and application. Ralph Bates is reported on his way to Iran as Sanitary Engineer. He recently completed his thirtieth year of service with the New York State Department of Health as chief of the Sewerage and Waste Section.

Frank Ahern recently tripped to the west from Washington and reports having a 1914 reunion with E. D. Hayward, Course I, in San Francisco. Ed Hayward lives in Portland, Ore., and is vice-president of Production and Management Engineering Associates, Inc. Frank also reports that his young son, Dick, has just received an appointment of assistant professor of Design in the Architectural Department of Kent University at Kent, Ohio. Mrs. Halford Ambler has written to us, telling of the death of Hal on July 23 at the Winchester Hospital from a coronary thrombosis. It is not pleasant to learn this, and the Class will, I am sure, wish to extend to Mrs. Ambler its sympathies. He was a Course I student and employed at Charles T. Main, Inc., in Boston at the time of his death. His home was 93 Cambridge Street, Winchester, Mass.

We note that Howard Morrison was an important speaker on the subject of "Physical Facilities for Research" at the Eighth Annual Conference on the Administration of Research, in New York in September. — H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass.; H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N. J.

• 1915 •

The sad passing of Dr. Compton is a heavy blow to the Institute, our Class, and all Alumni. It is difficult to express our deep feelings for his family but we do feel genuinely sympathetic for them in their great loss.

A tip of the hat with many thanks to Barbara Thomas and Al Sampson for the very enjoyable Class Cocktail Party they ran at the Algonquin Club, Boston, on the afternoon of Alumni Day. Among these 75 to 100 present were many sons, attractive daughters, and I might add, attractive wives. It looks as though 1915 knows how to grow old gracefully. This was such an outstanding success that it was immediately decided to repeat it next year. Guests from our friendly 1943 Class included its President, Jim Hoey, Sam Eisenberg's son, Gene, and their Class Secretary, Dick Feingold who all agreed we set them a splendid example. We enjoyed having these boys with us. Another Class guest, Virginia Thomas, couldn't make it from Washington, D. C., but wrote sweetly, "I certainly had hoped to be at the Class Cocktail party in Boston but as mother has probably told you, my plans were fouled up again by Uncle Sam. Mother said that the party was a smashing success — as usual! I sure thought of you all that night. Thanks so much for the invitation. *Nothing* will keep me away in 1955." We hope not, Virginia.

Attending the Stein-on-the-Table Alumni Dinner later that night at the Boston Statler were: Herb Anderson, Lawrence Bailey, Jerry Coldwell, Marshall Dalton, Sam Eisenberg, Fanny Freeman, Parry Keller, Larry Landers, Azel Mack, Archie Morrison, Pete Munn, Wally Pike, Frank Scully, Henry Sheils, Speed Swift, Carl Wood, Max Woythaler. This was an excellent showing for our Class, and a jolly reunion for us all.

Sharing the same delightful sense of humor that her brother, Tower, always had, (Mrs.) Margaret Piza Crane wrote: "It was ever so thoughtful of you to send me the invitation to the 1915 Cocktail Party. Though I can't be present in the flesh (all 110 lbs. of me!) I shall be very much with you and all the fellows in thought. Indeed I have recently been going through a large mass of M.I.T. memorabilia from "olden times" and am saving some which may be of keepsake interest to you and the boys. I'm not forgetting that 1955 will be the fortieth reunion. How Tower was looking forward to it! Good cheer to all and count me in on the toasts when it's time for the Alf story."

These Christmas card messages were unfortunately previously omitted from the Notes: Ray and Lucile Stringfield, San Francisco: "I can't remember even dropping you a line after our little visit last May, but life got rather hectic all of a sudden. I got down to Wilmington and my pump threw a wingding and the doctor the Du Pont boys called for me threw me in the hospital for nine days and told me to forget about the rest of my trip and to stop working 24 hours a day. So I haven't even gotten in a good vacation yet, between my two struggling companies and the poor consulting clients who always want answers in a hurry. I think I will sneak away week ends to the desert until spring and then maybe drive East for a rest, as I am feeling very decent again."

Alice and Lloyd Chellman, Washington, "All's well on the Chellman front, also the back, I'm glad to say. Life once more is beautiful. How about my partner in pain with your back trouble? Hope you are feeling as well as I am. Our plans to retire to Wilmington, N. C., are fast taking shape. No more New England winters for us. Our last trip to Boston made us feel that we can hardly wait to get to Wilmington."

Our men do move around! Thanks to Herman Morse in Akron for his excellent letter and friendly regards: "Enclosed is my check for 1915 class dues, which is somewhat late, but at least this year I have more excuse than sometimes, because when you were circulating your appeal, I was in the midst of a business trip to Australia, which kept me away from Akron for about seven weeks. It was my first experience going beyond California in that direction, and was quite enjoyable, and I saw a fair amount of the southeast coast of Australia from Brisbane to Melbourne. The country is one of tremendous potential resources, and needs only population and the will to develop the resources, to produce a very high standard of living. If further drilling brings out the existence of large deposits of oil, and as you know, some oil has already been found, it should add a great impetus to the economic growth of the country. Your last Class Notes were particularly distressing in one way, that is, that they contained word of the passing of two of my classmates, with whom I was somewhat more than casually acquainted, these being Jack Holmes, who came to Akron with me in 1915, along with Walter Hanchett and Spike Wheeler. The other was Charles Paine, and because

we took the same course, and our initials came from the same course, and our initials came from the same part of the alphabet, we were assigned to the same class rooms for most of the four years. I did not see too much of Charley after we left school, but still remember him very well, because he along with Palmer, Morrison, Metz and Norton, were practically always in the same class room for the entire school period. My first job on getting The Review each month, is to turn to the Class Notes, and over the years there have been mighty few occasions when there have not been many interesting items. You certainly deserve a lot of credit for the time and interest you have given to the job of being Secretary. Please remember me and Mrs. Morse, to your wife, with whom we spent a pleasant evening in Akron some time ago, along with Parry Keller and his son."

Bob Welles, 204 E. Mendocino St., Altadena, Calif., writes: "Just leaving tomorrow a.m. to try to see (with one wife and a couple of girls) something of Scandinavia and other parts of Europe farther south. No Roossians."

In Boston Sunday *Herald*, August 22, was a splendid picture of our own Jack Dalton, President of Boston Manufacturers Mutual Fire Insurance Company listed with prominent New England executives. Nice going, Jack! Add congratulations and success to these other classmates for their achievements: Allen Abrams, Vice-President Marathon Paper Corporation, Rothschild, Wisconsin, and recently elected president of Industries Research Institute. Carl Wood, recently made a director of Stone & Forsyth Company paper jobbers in Boston. Sam Eisenberg, appointed a member of the Boston Board of Zoning Adjustments by Mayor Hynes of Boston.

The M.I.T. 150-pound crew won an outstanding victory in winning the Royal Henley Regatta in England in July, and it was a pleasure for our Class to contribute to their Committee Fund. Congratulations to these boys for bringing this honor and glory back to M.I.T.

Chet Runels must now be leading our Grandfathers' League with a second son born to his daughter, Mrs. Mary Eleanor DeMallie on May 15th. Dick Bailey's letter as well as his check are most welcome. Many thanks for both, Dick. Why be so concerned about the uncertainty of your bachelor bliss, for there are many other such in 1915 and remember, I departed the ranks only a short time ago, so there is still hope for some of you. "A letter about myself and family? Since I am a bachelor by birth, and have continued in that condition there is nothing of interest to write. Possibly I am the only bachelor in the Class. A possibly unique, not exactly enviable and not to be praised or chided situation, or is it only a position? You may be sure I greatly enjoy the Class Notes and was very sorry not to have been present at the January 15th Class dinner in New York. It was necessary for me to be in Canada at that time. I have read about the grand time had by all 34 classmates and Hank Marion deserves great credit for organizing the dinner. I don't see anything that I have written that merits inclusion in Class

Notes, but do hope the check, when cashed, will look good in the class treasury."

In answer to a little class remembrance we sent Reggie Foster when he was in the hospital in Lowell last Spring, he writes: "Thank you for your very nice letter and book from the gang. I was very lucky and had an exceptionally speedy recovery, due to both the care of the professionals and that of my wife after my return home. I find myself a bit lazy but it is not my makeup to be waited on so much. With my best wishes to you, Fran (whom I haven't seen for a long time) and our Classmates."

My thanks to Bridge Casselman for his nice words. It's always a pleasure and a thrill for me to know our Classmates are pleased with these Notes. "I sure enjoyed the '15 dinner in New York. It is good to see the old gang now and then. I started to write this some time ago but wasn't going to send it without some kind of a message. This time it is one of congratulations on how well you handle the class affairs, and of hope that you continue to get the co-operation you deserve. No personal news this time."

I quite agree with Phil Alger on seeking advice on classmates on how, when and where to retire, as this approach to the traditional 65 years of age will bring many problems on how to be lazy and enjoy it. "Your billet doux arrived an hour ago, so here's your answer with a check. I look forward to our fortieth reunion — let me know when and where it will be. My youngest son, Andrew, graduated from Rhode Island's School of Design last June, and entered the Navy's OCS in September. We have a new granddaughter, Louisa Jackson Alger, born January 6, now weighing about eight pounds and she's the center of much attention. Her father, John R. M. Alger, M.I.T. '50, is supervising the Advanced Engineering Program of General Electric but expects to go into design engineering next year. Life here in Schenectady goes on in an interesting way. Being a consulting engineer for General Electric, I mostly do things I like to do, but Helen and I are looking forward just the same to the time when we retire to take up a fuller life. Any advice as to why, when, and where to retire will be appreciated from any and all Fifteneers."

In an attractively prepared 38-page booklet, "The Kerite Story — the First Hundred Years, 1854-1954" published by the Kerite Company, Seymour, Conn., our own Alan Dana comes in for credit and acclaim in a notice "The Kerite Company is greatly indebted to Alan S. Dana who compiled and collected much of the early history documents and pictures used herein." Congratulations, Alan, on such a fine job.

Unfortunately, our column must close on a sad note. Charlie Noyes, 217 Washington Avenue, Manoa, Havertown, Pa., has had a tough time. His letter: "Some three years ago I suffered a serious enlargement of the heart which forced me to give up my regular work. Last September (1953) while working around home I became overcome by fumes of a blow torch while burning off paint and have been pretty poorly ever since. They say

it takes a year to get over such fumes poisoning and I guess it does. There isn't anything you or my classmates could do, I am not suffering for want of care and I couldn't work if it was offered me, but I want to thank you for your nice letter."

It is sad to recall that on August 11, Laurie Geer died at his home 2506 Morrison Ave., Tampa, Fla. After receiving his master's degree in Course VII in 1933, Laurie went to Florida where he worked in the development of new carbonated beverage and citrus products, and in the field of food technology. For the past seven years he had been head of the Chemistry Department of the University of Tampa. To his widow, Mrs. Florence S. Geer and his son, Charles who survive him, the Class extends sympathy and friendly feelings in their loss.

The only word we have been able to get on Charlie Paine's passing is from the Eastern Corporation, Bangor, Maine: "Mr. Charles G. Paine entered the employ of Eastern as a draftsman at our Lincoln Mill immediately following his graduation from M.I.T. In 1919 he was transferred to our Brewer Mill as General Mechanical Superintendent. In 1930 he became Assistant to the General Manager and in 1936, Vice President and General Manager, which position he held until his death."

How'd you like this month's notes? All right? You can all help to continue them this way by writing in to "help Azel." — AZEL W. MACK, *Secretary*, 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

How quickly time passes. It seems it was only the other day that we were putting our class records away for the summer vacation, and here we are again. This is our first issue of the new season, and to be very honest with you it's nice to be back on the job. Hope your new letters will come in regularly and help us to keep our enthusiasm and the interest of the Class at a high pitch. As a note of interest, this column is being written as we wait for the force of hurricane Edna to hit us. It is only a couple of hours away at the most. After our experience with hurricane Carol we are not at all pleased to have this new visitor.

Probably the best way to start this column is to sum up the story of the 38th Reunion which was held at the Treadway Inn, in North Falmouth, Mass., on the weekend of June 11 and 12. The following fellows attended the interim reunion at the Inn: Meade Bolton, Jim Evans, John Woods, Steve Berke, Willard Crandall, Emory Kemp, Dick Berger, George Petit, Nat Warshaw, Hy Ullian, Harold Russell, Joe Barker, Tom Jewett, Ralph Fletcher, Maurice Holland, Lew Pratt, Jack Burbank. Again, the primary interest of the weekend was to get plenty of rest and relaxation, and most of the fellows got just this. There were quite a few golfers in the crowd, and while nobody broke any course record, many good shots were made and the players enjoyed themselves. One interesting development, and most significant also, is that Jimmie Evans has to sit down to put on his socks. Maury Holland presented three autographed copies of his latest book, "Architects of

Aviation," to the low scorers in the golfers and Jack Burbank, Meade Bolton and Ralph Fletcher were the "pros" who received the books.

The top story of the reunion was this one which was recorded by Jack Burbank for use in our Class Notes: "I am recording in this letter a very unusual experience that occurred to one, Ralph Fletcher, on the fifth hole which by the way is 450 yards long, with a par of five. After a good drive, and a fair second shot, down the center of the fairway, his ball was teed up in accordance with the winter rules which we were playing. He took a mighty swing at the ball which angled off into the woods on the hillside to the right of the fairway, landing in this woods not far from the green. It seemed as if all was lost on that hole for Ralph, but just as we started along the fairway to play our more conservative shots a white ball rolled down the hillside and came to rest about three feet from the edge of the green. Joe Barker was on the green in the conventional three strokes. I was on the green in four, having found a fairway trap. Ralph stood over his ball (I still don't know what club he used) took unusually careful aim for the cup, hit his ball, which took off in an absolutely straight line for the cup and the pin. It looked as if it was going to come to rest about two feet short of the cup, when it seemed to gain momentum by a certain hidden jet propulsion system and dropped into the cup for a birdie 4. Ralph was so overcome by the extreme effort that he promptly fell on his back, completely overcome by the situation. This golf experience really represents the high point of the recreational activities of the 38th Reunion of the Class of 1916, M.I.T." Thanks very much for this fine report, Jack.

The following items of class business were considered by the group: A nominating committee appointed by the Secretary and consisting of John Woods, Nat Warshaw and Harold Russell nominated Joe Barker to be the duly authorized representative of the Class of 1916, as a member of the M.I.T. Alumni Council. With strict adherence to the due process of parliamentary technique, Joe Barker was unanimously elected to this post to serve indefinitely. Upon motion duly made and seconded, it was unanimously voted to give Jimmie Evans a vote of confidence. Steve Berke made a very stirring appeal to the loyalty and fraternal spirit of the members of the Class to give financial and moral support to the 150 pound crew from M.I.T. in its quest for a world championship in the Wembley Rowing Regatta in England this summer. As all of us now know, the team representing our college won top honors in its class.

Another item of considerable importance which came in for much discussion among the members who were together on the Cape is the matter of a class president. The unanimous opinion was that at the 40th reunion it should be the responsibility of those who attend to elect a president. In the meantime, those who attended the 38th reunion were unanimously in favor of Ralph Fletcher continuing as secretary during the interim

period. Then, upon motion being duly made and seconded, it was unanimously voted that the salary of the secretary be cut in half and that a letter announcing this cut be sent to the Class Treasurer Hovey T. Freeman so that there will be no possibility of over-payment. Then there was another responsibility which was assumed by two of the members of the Class, Maurice Holland and Joe Barker. Maury and Joe agreed to raise sufficient funds to finance the preparation and distribution of a book in which would be included biographies of all the living members of the Class for distribution at the 40th Reunion. The Executive Committee would work with Class Historian Walt Binger on gathering the material for this project and preparing the layout, engaging the printer, and so forth. This idea of a book which would include biographical sketches of all the living members of our Class, based on the theme, "We've been out 40 years—what advice can we give to the children of the members of our Class," and dedicated to the sons and daughters of the members of the Class of 1916, took the form of a motion, was seconded and unanimously approved by vote. This was Maury Holland's idea and certainly seems to be a good one.

As a final item of business, it was determined that we would experiment with a mixed reunion at the get-together next year, and it was left to the Secretary to determine the place. A commitment has been made with the Chatham Bars Inn, Chatham, Mass. for a mixed party reunion on the two days following Alumni Day in 1955, or more specifically on June 14 and 15. The Inn is located about 20 miles from Hyannis, a central point for incoming and outgoing transportation, and is right on the seashore. Our Secretary visited the Inn this summer and was quite pleased with what it had to offer in the way of facilities for a group such as ours. Nat Warshaw called the place to the attention of our Secretary, and we are thankful for his recommendation. Don't forget now, next June, plan to bring the ladies.

We would like to pay tribute to Meade Bolton, who deserves many words of commendation for his fine Class Spirit which was demonstrated by his coming all the way from California to be on hand for the reunion and cocktail party. He certainly knows how to enjoy himself, and we feel confident that if anyone were to ask him if it was worth the trip to come all the way to the Cape for the reunion, he would very emphatically say "Yes, Yes, Yes!" Bring along a couple of other Californians with you next year, Meade.

The cocktail party for members of the Class of 1916 at the Hotel Statler on Alumni Day and immediately prior to the Alumni Banquet was attended by the following: Ping Loo, Mr. and Mrs. Tom Berrigan, Izzy Richmond, Jimmie Evans, Meade Bolton, Mr. and Mrs. Steve Berke, Al Lovenberg, John Woods and daughter Margaret, George Petit, Dick Hunneman, Steve Whitney, Bud Kaula, Mr. and Mrs. Joe Barker, Mr. and Mrs. Hy Ulliam and son Joe, Charles Cellarius, Mr. and Mrs. Ralph Fletcher, Phil Baker, Shatswell Ober, Dave Patten, and Mr. and Mrs.

Norman Thompson. It was good to see the whole gang and especially to see Norman Thompson who brought his lovely wife with him. Most of us will recall that Norman could not be present on graduation day in 1916 because he was busy pacing the floor nervously at the hospital awaiting the arrival of a son who made his entrance into the world on June 12, 1916.

Telegrams were received from Earl Mellen and Joe Minevitch expressing regret that they could not be present for the Class activities. From the beginning to the end, the reunion week end through the close of Alumni Day for those who had the good fortune of being present, a relaxing, restful and yet exciting good time was had by all. Hope we'll see more of you next year, and remember, next year the ladies are invited to join with us for a few days on the Cape. That will do it for this issue. We'll be back next month rarin' to go. In the meantime, you can indicate your approval of our efforts by sending us those letters that keep us up to date on your activities and those of other classmates.—RALPH A. FLETCHER, Secretary, P.O. Box 71, West Chelmsford, Mass., HAROLD F. DODGE, Assistant Secretary, Bell Telephone Laboratories, 463 West Street, New York, N. Y.

• 1917 •

Matters are well in hand in the Boston area with the experienced touches of Stan Dunning, Henry Strout, and the guidance and help of Lobby and others. Stan arranged for a cocktail meeting at the St. Botolph Club prior to the annual Alumni Dinner and there was plenty of opportunity to discuss various matters of importance, such as the advantages of retiring from the rat race to Cape Cod, the theme of a song sung by Heinie Gartner, Harry Sandell, Bill Cleary and Hutchinson. Even Rudy Beaver hobbled in. Incidentally, he is recovering from his broken legs and will soon be back making surgical knives. Bill Dennen brought his son along—the son who graduated from M.I.T. this year.

Alumni Day went off with its usual éclat with the gentle but firm touch of Executive Secretary Lobdell apparent only to experienced old hands. Among those present: Mr. and Mrs. Ken Bell, Ray Blanchard, Mr. and Mrs. Penn Brooks, Mr. and Mrs. Bill Dennen, Stan Dunning, Heinie Gartner, Art Gilmour, Clarence Holt, Harold Lobdell, Mr. and Mrs. Al Lunn, Win McNeill, Ray Stevens, Henry Strout, and Mr. and Mrs. Walt Whitman.

Bill Eddy was seen cruising off Martha's Vineyard watching the start of one leg of the New York Yacht Club race. He now oscillates between Spain, Greenland, and Iceland, concerned with various engineering aspects of Air Force installations in those areas. Walt Whitman returned from Brazil and brings the good word that Bill McAdams is better and hopes to be able to participate to a limited degree in the teaching program at M.I.T. beginning this fall. Northeastern University recently announced the appointment of Emil A. Gramstorff as dean of the Graduate Division of the College of Engineering.

Schoonie Schoonmaker recently wrote:

"I have never given you any of my life history. As you remember, I stayed in the Army after World War I. I retired in 1947 and since that time, I have been teaching Electrical Engineering at the University of Florida. I am now an associate professor and teach AC and DC Machinery and AC Circuits. This is a very nice place to live. I married in 1922 and have four children, two boys and two girls. My youngest is a junior here. I also have one granddaughter. I have not been in New England since 1947 but am looking forward to the 40-year reunion in 1957."

Francis Goodale contributes: "No doubt you will be surprised to receive this letter from a member of the Class of 1917 who has been silent for many years. However, I believe several old friends will be interested to know of the passing of Fred Foss, so unless some other classmate has already informed you, I hope that you will be able to use the enclosed material in the Class Notes. For myself, I recently retired after working for more than 30 years in various branches of the sugar industry, and am now living in good health on a small farm about eight miles southwest of Stroudsburg. I always enjoy reading the Class Notes, and am looking forward to renewal of old acquaintances at the 40th class reunion."

"Another of our classmates, who will be well remembered by those who studied Civil and Sanitary Engineering, recently passed away. Frederic D. Foss, Course XI, died of a heart attack while on a business trip, on June 17, 1954. After working his way through the Institute, Fred had a continuous and successful career in the construction industry. Before forming the engineering and contracting firm of Foss-Halloran-Narr in Long Island City in 1947, he had been associated with the Fred T. Ley Company, Tishman Realty and Construction Company, Fred F. French Company, and New York City Housing Authority. From 1940 to 1947, he was vice-president of the Corbetta Construction Company. He was a member of the American Society of Civil Engineers, the American Concrete Institute, and Building Arts Club. He is survived by his wife and a son, who is also associated with Foss-Halloran-Narr, Inc."

On a recent trip to Chicago we ran into Ken Childs of Carter Company, traveling in state to Chicago with his designer of babies' underwear and fittings. The meeting was most enjoyable for all concerned and perhaps there was a touch of jealousy in our party of three when Ken felt that he and his companion found it necessary to leave us for the balance of the journey. Apparently Ken finds advantages in fulfilling his particular responsibilities with the world's most famous manufacturer of knit underwear. Currently he is in full charge of supply to the youngest generation and if any grandfathers have problems in this area, we are sure he would be glad to have them consult him about them. The application of civil engineering to diaper design is indeed an illuminating subject for exploration.

The Alumni Register Office has constituted our Secretariat as a "missing persons bureau." Mail has been returned from the following: Joseph W. Costello,

Michael J. Dumit, Harold A. Haven, Philip L. Hunt, David M. Jones, John J. Powers, H. Chandler Stearns, Albert S. Thyberg, John L. Trisler, Jr., Dr. Frank A. Wilmot. Have you any information about them?—RAYMOND STEVENS, *Secretary*, 30 Memorial Drive, Cambridge, Mass.

• 1918 •

Trying to ride out the third hurricane which has inflicted New England in the last 16 years, and at the same time to gather the flying papers into a logically intact report, makes for uneasy writing, but here goes. First order of business in the fall is to report those faithful brethren who attended Alumni Day: Eli Berman, Les and Mrs. Conner, Sax Fletcher, Al and Mrs. Grossman, Julie and Mrs. Howe, Tom and Mrs. Kelley, Johnny and Mrs. Kilduff, Ray Miller, Gretchen, Fred Philbrick, Max and Mrs. Seltzer, Carlton Tucker. This makes just a neat dozen from the scores who graduated. Pete Sanger testifies that daughter Marcia has a new son which makes Pete five times a grandparent, the score to date being three boys and two girls. (Older daughter Barbara has two of a kind and two kinds.) With characteristic thoughtfulness, Pete also sent us, with murmurs of pleasure, a clipping describing the marriage of George Halfacre's (track) daughter, Priscilla, to David C. Bischoff of State College, Penn. George took Course III, along with Pete, Chinck Watt, Bill Turner, and so on. From San Antonio, Texas, comes direct from Palmer Giles (wrestling team), an invitation to attend the marriage of daughter Muriel Joy to the Reverend Wilson Rowland on September 9.

Gretchen postcarded us from Honolulu that the lei was beautiful, the climate insurpassable, and the vacation refreshing. By now she must be back in The Thomas School. Fred Philbrick has gone to Florida to live because he finds a warm climate more personally agreeable. If we know Fred, he will ponder truths of profound and potent value no matter where he lives. Personally, we much prefer a New Hampshire winter with a fireplace to a Florida summer. Even air conditioning down there in July is like charging hell with one bucket of water.

By way of some unidentified but thoughtful hand has come to your Scribe an announcement of the wedding of Sax Fletcher's daughter Alice to one Jarvis M. Freymann on Saturday, May 8, in the Presbyterian Church at White Plains, N. Y. Somewhat more promptly comes a newspaper clipping from the Lowell *Sun* stating that on July 11 Francis P. Corbett was married to Miss Julie A. Flanagan by the bride's cousin. Corbett left the Institute during the first World War. As to the intervening years, we have no information possessing a semblance of reliability, but the answer to the immediate present seems to be that he is staff appraiser and expeditor of paraplegic housing for the Veterans' Administration. To complete our report on matters ecclesiastical, Rev. George O. Ekwall, longtime rector of Christ Church, Waltham, since finally shaking off the smells of the Institute's chemistry laboratories in 1926 and acquiring an odor of sanctity, was one of

five nominees for the post of Bishop Coadjutor of the Episcopal Diocese of Massachusetts. The appointment finally went to a rector from New York, leaving George with a somewhat increased reputation and the same old unquenchable smile.

Harold Weber told the Western Maine M.I.T. Alumni Association how come and what for at a meeting held in Brunswick last May. Sez he, "There is a danger in placing the scientist and engineer, untrained in social and political matters, in a position where his advice and opinion in these fields is sought and accepted without question." M.I.T. was doing something about it, now, he said, since 20 percent of the engineer's education is devoted to liberal arts subjects. Formerly, engineering and science consumed nearly all the student's time. To this your scribe would add the observation that the student body will never take seriously what the faculty does not take seriously.

Frederick S. Cross, a Du Pont Company patent attorney, has retired after nearly 28 years in the company's Legal Department. He has been patent counsel for the Engineering Department in recent years. When Cross was employed by Du Pont in 1926, the Patent Division numbered less than half a dozen attorneys. In a few years it increased many times in size, reflecting the company's growth and diversification in the years following World War I. During this period of expansion, Cross handled many interesting and important negotiations and patent developments for the Organic Chemicals and Explosives Departments.

Any large family sometimes has difficulties keeping track of where all its members have gone and what they are doing. Out of the 600 odd men classified in one way or another with 1918, the following have strayed to places and in ways we know not of. Can anyone of the brethren give us word or address concerning: Donald Browne, Luis Dasso, John H. Earl, Frederic J. Foley, Agesilaus Grisopoulos, Mrs. Florence S. Hodgkin, Nathan F. McClure, Edward H. Moffatt, Frank J. O'Connor, Frank G. Osgood, Mrs. H. J. Parker, Frank A. Richardson, Edmund J. Ryan, Edward J. Shields, Frank A. Travers, Morris L. Ullman. — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey, N. H.

• 1919 •

The Class of 1919 had its 35-year reunion at Wentworth-by-the-Sea, Portsmouth, N. H., June 11 to 13, and the beautiful weather helped make the affair extremely successful. The attendance was beyond expectations, with 45 classmates and 33 wives. Friday was the day for arrivals, and some of the folks played the regular and small pitch and putt golf courses, some putted on the elaborate greens that adjoined the hotel, others hiked, and everybody visited around the hotel and porches. The cocktail party on Friday was from 5:30 to 7:30, followed by dinner in the main dining room. In the evening Ed Moody ran a square dance in the Flamingo Room for those interested. This was lots of fun and it was surprising to see how much pep the 35-year folks had left in them. Saturday was a very eventful day with a golf tournament, putting tournament and cruises on Shee-

line's boat for those interested, and lots of visiting. The cocktail party was held in the Tally-Ho Room from 6 to 7 P.M., with President and Mrs. Killian as honored guests. Dinner was held in the California Room with about 80 attending. The principal speaker was President Killian, who told us about the new developments at the Institute and gave everybody, particularly the wives, a chance to meet him. Don Way as our worthy president presided at the dinner and had George McCreery introduce President Killian. Prior to this dinner Don Way gave out the following prizes for the various competitions: Golf low gross — Gene Smoley; low net — Paul Sheeline; kickers — Lloyd Sorenson; low putts — Ben Bristol; 2nd low putt — Karl Rodgers; ladies' low putts — Mrs. Herzog; 2nd low putts — Mrs. Kimball. On Sunday the clambake was held about a half mile from the hotel right at the shore and those who stayed over were certainly well repaid, as it was lots of fun to don sailor hats and clam bibs and aprons and gorge steamed clams, lobsters, fried chicken, corn, sweet potatoes and beer. Accordion accompaniment was helpful for the singing fest of old Tech songs which followed.

We were very sorry that the committee chairman, Will Langille, was prevented by illness from attending, but I am happy to report that he is fine now. George McCarten, also on the committee, was unable to come because of a cerebral hemorrhage he had in May. He is reported to be better now. Here's to a complete recovery, George. Congratulations to Will on being made president of his firm, Diehl Manufacturing Company. George Bond was sorry to miss the reunion but was attending his younger daughter's graduation from the school at East Northfield, Mass., at the time. His older daughter does virus research work at Harvard Medical School; his older son is a geologist for Shell Oil at Shreveport, La., and his younger son is a lieutenant in the Army. Our sympathy goes to George in the loss of his wife last Thanksgiving.

Fred Parker has retired from his position in Japan with Standard-Vacuum Oil Co. and now lives at 217, 21st Street, Santa Monica, Calif. His last position was on loan to the Japan Oil Storage Company as general manager, a company formed at the government's request to take over the storage of petroleum products in Japan and made up of personnel from five of the larger export companies. Fred found it a very interesting position since it meant reconditioning Japanese storage including the vast underground military units as well as adapting to our military's requirements. The Korean war added to the storage and shipping problems. We are sorry to hear of Fred's illness, which hospitalized him for four months and prevented his attending our 35th reunion. He has not fully recovered but gets around all right. We hope he will soon be completely well again.

Earl Stevenson was included among Greater Boston's business and industrial leaders whose "success stories" appeared as a series in the Boston *Post* last spring. Earl's company, Arthur D. Little, Inc., continues to expand, has now opened its Western Laboratories Division in San

Francisco. John Rogers has been appointed special glass refractory consultant for the Laclede-Christy Company of St. Louis. Formerly manager of glass industry refractory sales, John will devote his knowledge and technical skill gained in many years of glass furnace refractory experience, to domestic and foreign users of glass-melting furnace refractories. He has been with Laclede since 1925 in sales and supervisory capacities. Congratulations! Charles Chayne, Vice-president in charge of engineering for General Motors, has been the guiding genius in the development of many advanced experimental cars. Most notable of his recent "babies" are Le Sabre and GM's sensational *Starfire*, powered by a gas turbine engine, seen for the first time at the Chicago Motorama this year. Charles' hobby is antique automobiles and he has a notable collection of them. Frank Reynolds is director of research for Bird and Son, Inc., of East Walpole, Mass., a company which manufactures asphalt shingles and sidings, waterproof papers, roofings, linoleum, paperboard specialties and boxes. Thomas Bott is still vice-president and treasurer of the Beverly Savings Bank, Beverly, Mass. His daughter Joan is teaching at Chatham Hall, Va.; his son Thomas is with the U.S. Army in Japan; and younger son David is a freshman at the University of Massachusetts. Jack Fleckenstein's daughter Joan is entered in the graduate school at the Colorado School of Mines, Golden, Colo., the first girl ever accepted in that graduate school.

During May your Secretary had some business calls to make in the Minneapolis-Saint Paul area and was very fortunate to have been able to have dinner and spend an evening with Chuck Drew and his wife June at their home in Minneapolis. Both Chuck and his wife are very active in civic affairs. Chuck is a Director of the Y.M.C.A. and of the local Society for the Blind, while his wife carries considerable responsibility in the Episcopal Church. Chuck is active in a local business, which prevented his coming to our Reunion this year. We had a great time talking over old times and Chuck has promised that he will look us up the next time he is East.

Our Class was well represented on Alumni Day in June, with Don Kitchen and Art Blake on the banquet committee, and the following other members present: Bill Banks, Ray Bartlett, Ken Davidson, Cutter Davis, Ev Doten, Jim Holt, George Irwin, Wirt Kimball, George McCreery, Warren Maynard, George Michelson, Gene Mirabelli, Adolf Muller, John Orcutt, Maurice Role, Isidor Slotnik, Leighton Smith, Carl Svenson, Don Way and Stan Weymouth. Contributions from the Class of '19 to the Alumni Fund as of May 30 were \$2,384.50, with 24 percent of the Class contributing.

New addresses: R. E. Tribou, living in Norwell, Mass., mailing address R.F.D., Cohasset, Mass.; Charles T. Kennedy, The Ferro Concrete Construction Company, 203 West Third Street, Cincinnati, Ohio; Lawrence B. Cahill, 8241 Woodbine Avenue, Hartwell, Cincinnati 16, Ohio; Franklin S. Adams, P. O. Box 512, Stockbridge, Mass.; Max Untersee, 1621 So. Palm Avenue, Alhambra, Calif.; Francis D. Porcher, 875 West End Avenue, New

York 25, N. Y.; Sung-Sing Kwan, Kwan Chu and Yang, 25 Sin Yang Street, Taipei, Taiwan, Formosa; and Kuang-Piao Hu, 20 Lane 61, Ling Yi Street, Taipei, Taiwan, Formosa.

Your Secretary at this writing is moving into a new and smaller home at 30 School Lane, Scarsdale, N. Y. Now that son Eugene is away for his freshman year at Cornell, the family is retrenching a little. They are enjoying the wonderful conveniences of a brand-new home and are also benefiting by the saving of effort and time required to keep the place going. — EUGENE R. SMOLEY, *Secretary*, The Lumsum Company, 385 Madison Avenue, New York City.

• 1920 •

Greetings, after the long summer hiatus! Once more we are starting on what will be a big reunion year for us so please watch these notes closely for further reunion announcements and news. Thanks to the co-operation of Norrie Abbott, I can give you the names of classmates who gathered at the Alumni Day last June: Norrie Abbott, Tony Anable, Frank Badger, Al Burke, Ned Cochrane, Ken Davidson, George DesMarais, Bill Dewey, Foster Doane, Jesse Doyle, Herb Federhen, Al Glassett, Harry Kahn, Pete Lavedan, Erskine Lord, John Nalle, Bob Patterson, Ed Ryer, C. R. Soderberg, L. G. Lee Thomas, Ernie Whitehead, A. B. Wason, E. Wason. Norrie says that Ned Cochrane did an outstanding job at the morning conference, predicting the future in engineering for the next 10 years. He also says that great enthusiasm was shown by everyone present with regard to the reunion next spring and they all indicated that they were planning to be there. I sincerely hope that is true of everyone who reads these notes.

Norrie has also forwarded to me copy of a very welcome letter from Marion Sutton Sanders who is a consulting electrical engineer at Wytheville, Fla. He says, "Way down here in Florida I am a bit out of touch with Tech activities. We have about 15 Alumni scattered over a radius of 150 miles." Sanders was with Hercules Powder Company on plant construction before setting up his own consulting engineering office. He has been president of the Wythesville Rotary Club and is now president of the Wythe County Chamber of Commerce. Last year he went to the Rotary International Convention in Paris. It is easy to see why he is so active in town affairs when you read what he says about his town. He says: "Any industry employing 50 to 200 ought to consider locating here in a marvelous climate 2,500 feet above sea level, cool in summer yet far enough south to be mild in winter. A good place for an electronics business or something of the sort." Sanders generously encloses a contribution for the 1920 Class Fund which has been turned over to the Alumni Association. He asks about Ralph Booth and we can tell him that Ralph is doing a good job of running the noted firm of Jackson and Moreland here in Boston.

Your Secretary received a most welcome visit this summer from Skeets Brown of El Paso and Mexico City. Skeets has changed very little in spite of his

heavy responsibilities as the man in charge of all of the American Smelting and Refining Company mining operations in that area. He has a boy at Pomona College and he is a 6' 5" basketball and track star, holding the record for the discus. He has a married daughter in El Paso and two grandchildren, and he has a daughter who graduated from Scripps college in Claremont and has been more recently at Katharine Gibbs Secretarial School. Skeets mentioned a number of other M.I.T. men including Walter Nock who is assistant manager of American Smelting and Refining at Mexico City, and A. J. Yaeger who is superintendent of projects of the same company, F. M. Kurtz who is president of the American Coffee Company and vice president of the A & P, and M. B. Littlefield who is with the Cerro de Pasco Copper Company. C. C. Moore is chief chemist of the Union Oil Company, San Pedro, Calif.

Skeets had previously written me about the untimely death of Clarence Syner on April 10 from a heart attack. Syner was superintendent of the American Smelting and Refining Company at Charcas, Mexico. He had given his entire career to the Mexican mining department of this company and was highly regarded by its personnel for his engaging human qualities as well as his engineering ability. He is survived by his widow, Eleanor, a son, Alan, who is a mechanical engineer with the El Paso Gas Company, a son, David who is in his last year at Texas Western College, and a daughter Mary who graduated from Mt. Holyoke last June.

A welcome letter from another distinguished and prominent Texan, George B. Morgan, indicates that George is maintaining a healthy activity in M.I.T. affairs, getting to meetings of the Southeast Texas Alumni Association at Houston. He says that he and Skeets plan to come up to the 35th Reunion and we certainly hope they will make it. George has just been elected president of the Beaumont, Texas, Rotary Club which numbers in excess of 300 members. A picture of him on the front page of the *Beaumont Journal* indicates that he is just as handsome and distinguished in appearance as ever although a little lacking in fur suit adornment on top. George is president of Beaumont's Texas Metal Works and also owns the Standard Appliance Company there. He is a past president of the local chapter of the Texas Society of Professional Engineers, southeastern regional president of Lambda Chi Alpha fraternity, past president of the Beaumont A. and M. Club, and past president of the state association of former A. and M. students. He was also at one time vice president of the Gulf States Utilities Company.

Another classmate that has made the headlines is Morris Lipp, city engineer of Miami Beach, Fla., who was recognized as the foremost engineering authority on erosion control in Florida and a nationally known expert on the subject of erosion. He made the front page of the *Gulf Beach Journal* recently when he was called in to make an inspection on the beaches and asked to serve as consulting engineer on erosion projects along the Florida coast. I am indebted to Bob Robillard for this information.

Your Secretary was delighted to get word from those "old salts" Buz Burroughs and Dick Gee while they were making their annual summer cruise. They wrote me from St. Andrews-By-The-Sea in New Brunswick and Dick says they got to talking about the great 1920 reunions of the past and are both looking forward to the 35th. He says they ran into Jim Parsons awhile back and Jim was just back from a vacation on the continent. Captain Burroughs said that he is still at the old stand in New York City and always glad to hear from any of the boys in town. Dick says his two daughters and three grandchildren keep him busy as well as the production and sales of the very successful, molded one-piece Tech sailing dinghy which has been accepted by many colleges and used in many inter-collegiate races. Dick expresses the hope that any '20 men passing near New Bedford will stop in and say "hello."

A letter from Dorothea Rathbone tells about Flossie Fogler Buckland being the guest speaker at the M.I.T. Women's Association annual meeting at the Faculty Club last spring. Dorothea says Flossie is the same old gal and made a very successful speech. She also made three other speeches that same day in other parts of this area. We agree with Dottie that Flossie has made good in a big way. The Rev. Franklin Blackmer has left Cambridge and is now in Andover, Mass., address 32 York Street. Vice-Admiral Robert W. Hayler is now in Carmel, Calif. Homer Howes' present address is 35 Lake Forest Street, St. Louis. Art Dopmeyer is with the State Department in Washington. Captain Harold Murray is in Alexandria, Virginia, having left Lincoln, Neb. Murray Whittaker is now in Atlanta, Ga., address 855 Peachtree Street. Franklin Badger is in Hollywood, Fla. Mouse Meissner has left New York City and is in Devon, Pa. He is still in the architectural field. Leo Murphy has left Andover and is now in North Adams, Mass. Can anyone supply the present addresses of any of the following classmates? Mail to them has been returned. Mrs. Eli K. Berton, 56 Summer Street, Natick, Mass.; Francisco Gonzalez-Rosa, Santa Catalina Drive #24, Vibro, Havana, Cuba; George N. Green, 1261 Madison Avenue, New York City; Merton C. Hall, Southland Hotel, Dallas; Herbert G. Lockhart, 6620 Lotus Road, Philadelphia, Pa.; Ralph J. McFadden, Ridgewood, Wheeling, W. Va.; Miss Constance E. Peters, 107 Hobart Road, Newton Center, Mass.; Raymond P. Ryan, 741 St. Owen Place, Bronx, N. Y.; Lieutenant Colonel Wendell P. Sammet, 1049 58th Street, Brooklyn, N. Y. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

Greetings and a hearty welcome to join this thirty-fourth year of our monthly meetings in these columns to pass along the news which you send in between our annual June parties in Boston and the five-year get-togethers. If you haven't already noted the important dates for the Class of 1921 in the next two years, jot these down in your notebook now: Annual party, Hotel Statler, Boston, 5 P.M., June 13, 1955; thirty-fifth reunion, June 8,

9 and 10, 1956, at the Sheldon House, Pine Orchard, Conn., and June 11 at the Hotel Statler, Boston. Events are being scheduled well in advance particularly so that those living at a distance can make plans to attend. Complete details will appear in later issues of *The Review*.

Sincere thanks are extended to you for your aid and interest in making these notes timely, accurate and complete. Your letters with news of yourself and others of the Class are greatly appreciated by all and it is hoped that you will continue this service to your classmates throughout the coming season.

We have all been saddened by the death last June 22 of our beloved leader and friend, Karl T. Compton, just a short time after many of us had the pleasure of chatting with him at Jim Killian's dinner for alumni club officers and members of the Educational Council. No words can adequately express the high esteem in which he was held by all, nor can they ever pay full tribute for all he has done in the interest of M.I.T., its Faculty, staff, students, Alumni and a host of friends of the Institute. Our sincerest sympathy goes to his family on behalf of the entire Class of 1921. In this hour of our great loss, we re-dedicate the fullest support of the Class of 1921 to President James R. Killian, Jr., '26, and to his colleagues in carrying on the development of Technology and administering its activities.

It is with deepest sorrow that we record the passing on August 15, 1954, of a dear friend and classmate, Joseph Wolcott Gartland, and extend heartfelt sympathy to his family on behalf of the Class. A nationally recognized authority on high temperature reactions on carbon and, for the last 32 years, a member of the laboratory research staff of the National Carbon Company in Cleveland, he was a resident of Lakewood, Ohio. Born in Dorchester, Mass., on November 21, 1900, he prepared for M.I.T. at Boston English High School. At the Institute, he was a member of Phi Kappa, the English High Club, Catholic Club, Chemical Society, track and cross country squads. He was graduated with us in course X and received the master's degree in course X-A in 1922. During his professional career, he presented before various national scientific societies many papers on graphite, refractories and high temperature reactions. His memberships included the American Chemical Society, the Electrochemical Society, of which he was chairman of the Cleveland Section in 1948, the American Petroleum Institute and the Society for Experimental Stress Analysis. He was a registered professional engineer in Ohio. Active in Technology affairs, he had been in regular attendance at all of our five-year class reunions and at many of our annual gatherings. He also participated in the affairs of the M.I.T. Association of Cleveland and was a member of the M.I.T. Educational Council for that area in advising young men on admissions and scholarships. He is survived by his wife, Elizabeth, a son, Peter, Dartmouth '53 and now a sophomore in the University of Michigan School of Law, and a sister, Agnes, of Dorchester, Mass.

The annual June activities in Boston and Cambridge, highlighted by the yearly gathering of the members of the Class with their wives, children and guests, saw a total of 63 in attendance this year, attesting to the ever increasing popularity of this one-day program between the longer celebrations every five years. President Jim Killian's dinner on the eve of the class meeting, was attended by five of our group who are Honorary Secretaries of the Institute: Sumner Hayward of Ridgewood, N. J., Sam Lunden of Los Angeles, Calif., Helier Rodriguez of Havana, Cuba, Bill Sherry of Tulsa, Okla., Ray Snow of Raleigh, N. C., Glenn Stanton of Portland, Ore., George Welch of Poughkeepsie, N. Y., and your Class Secretary. The total mileage covered by this group emphasizes the widespread interest in these treks to Tech. Mich Bawden was a member of the luncheon committee for the Cambridge homecoming. Following the hospitable precedent which they established a number of years ago, Saul and Regi Silverstein were the generous hosts at the class meeting at the Statler and presided over the delicious buffet which they provided for the outstanding enjoyment of all. Ted Steffian was again the master of good cheer. Photo-historian Bob Miller came up with revised movies and stills of past reunions, including the first series of slides of the course VI-A group at the time of our graduation, thanks to the foresight of Dug Jackson, Jr., and the help of Ednah Blanchard of the Electrical Engineering Department. Chick Kurth, projectionist extraordinary, observed as he was hemmed in by the mob, that maybe we should hire a hall! Among those enjoying the various events were: Elly Adams, Mich and Mrs. Bawden, George Chutter, Cac Clarke, Josh Crosby, Jack Cummings, Ed and Mrs. Delany, Chick Dube, Al Edson, Fritz and Mrs. Ferdinand, Hartly Flemming, Harry and Mrs. Goodman, Bob Haskel, Sumner Hayward, Roy and Mrs. Hersum and daughter, Cynthia, Norm and Mrs. Hunter, Andy and Mrs. Jensen, Algot Johnson, Mrs. S. Murray Jones and son, Malcolm '57, Joe Kaufman, Chick and Mrs. Kurth, Sam and Mrs. Lunden, Bob Lurie '52, Ted McArn, Ed and Mrs. MacDonald, Leo and Mrs. Mann, Bob Miller, Phil and Mrs. Nelles, Dan MacNeil, Harry Rosenfield and son, Lt. (j.g.) Jay Rosenfield '51, Fred Rowell, Helier and Mrs. Rodriguez, Ray and Mrs. St. Laurent, Steve Seampos, Bill Sherry, Saul and Mrs. Silverstein, Ray and Mrs. Snow, Glenn Stanton, Ted Steffian, Harold and Mrs. Stose, Bill Wald, George Welch and Frank Whelan.

Roderic L. Bent heads the furniture making firm of S. Bent and Brothers, Gardner, Mass., manufacturers of chairs which are authentic reproductions of early types. Associated with Rod are his two sons, Jack, M.I.T. '50, who is production manager, and Gardner, M.I.T. '48, who is sales manager. Robert B. Crawford, Commander, USNR, writes that he has been transferred from Assistant Inspector of Naval Material, Redwood City, Calif., to Administrative Officer, Inspector of Naval Material, 1206 Santee Street, Los Angeles 15, Calif. Norman W. Hunter is associated with the National Fire

Protection Association, 111 John Street, New York City, and makes his home at 24 Remington Road, Radburn, Fairlawn, N. J., where he serves as vice-chairman of the Board of Education and as disaster chairman of the Red Cross and local Civilian Defense activities.

Theodore A. McArn writes from his new home at 316 North Durkee Street, Appleton, Wis., that he has resigned as development engineer of the Downingtown (Pa.) Manufacturing Company, to become assistant chief engineer in charge of development for the Valley Iron Works of Appleton. In addition to the general line of head boxes and sluices for which Valley is well known, Ted says they are designing complete packaged outfits of both cylinder and Foudrinier types of papermaking machines. William C. Ready, colonel with the Second Engineer Corps, was recently engaged in special exercises at Fort Dix, N. J. Donald B. Carter has been named an assistant chief accountant in the general accounting division of the comptroller's department, Travelers Insurance Company, Hartford, Conn. He has been a senior accountant since 1952, having joined the Travelers in 1928 and subsequently becoming chief clerk of the accounting division.

Albert E. Bachmann has been elected a vice-president of the Standard Packaging Corporation. Al is a past president of the Technical Association of the Pulp and Paper Industries. Frank H. Coldwell, since 1951 mill power manager, has been named manager of the newly created power department of the Nekoosa-Edwards Paper Company, Port Edwards, Wis. Associated with the company since 1925, Frank will have charge of all the Nepco hydroelectric plants, the telephone system and associated operations. Edward W. Jackson has been appointed works manager of the Charlevoix plant of the Budd Company, Detroit, Mich. An industrial engineer before joining Budd in 1929, he has been assistant works manager in charge of cost control since 1952.

Webster W. Frymoyer has been elected a vice-president of the Foxboro Company, instrument manufacturers of Foxboro, Mass. Web joined the company in 1926, after service with the National Bureau of Standards, and was director of research until 1939, when he became general superintendent. He has been factory manager since 1951 and will continue in this capacity. Ivan C. Lawrence, former vice-president in charge of personnel administration for the Minnesota Mining and Manufacturing Company, has retired and is closing his home in St. Paul to move south, according to a note from Kenneth B. Lucas '32, President of the M.I.T. Association of Minnesota, in which Ivan has been active. A native of Lake Benton, Mich., Ivan joined 3M in 1933 as an industrial engineer, becoming industrial relations manager in 1941 and vice-president in 1948.

Maxine and your Secretary staged a miniature class reunion at our home in Glen Ridge, N. J., in honor of Helier and Graciela Rodriguez on their return trip to Havana from our Boston party. Others present were Max and Ethel Burckett, Sumner and Elizabeth Hayward, Gus and Regina Munning, Joe and Dorothy Wen-

ick and neighbors Jim and Gen Fagan, upholding the honor of Notre Dame. A recent letter from Helier tells of a brief trip which he and Graciela made to Spain to attend the wedding of his nephew. John W. Barriger, 3d, Vice-president of the Rock Island Railroad, has been named by the Alumni Association as an alumni member of the Corporation Visiting Committee for the M.I.T. Libraries. Hilliard D. Cook of Phoenix, N. Y., announces his entry into the consulting engineering field for service to the paper industry. Doc has had a wide experience in the papermaking field, from apprentice with the S. D. Warren Company to general manager of Sweet Paper Corporation. In between, he has run a research laboratory, designed equipment, handled process control, engineered a plant and done consulting work in South Africa and South America. He has presented articles to T.A.P.P.I. and other industry organizations and is a registered professional engineer in New York. He is also a past president of Kiwanis, president of his local Board of Education and active in Technology and class affairs. Doc can be reached at P.O. Box 64, Phoenix, N. Y.

Saul M. Silverstein left on Labor Day for Turkey on his fourth European trip under the auspices of the government's Foreign Operations Administration and the Council for International Progress in Management, of which he is secretary. A member of an eight-man team, he was away for 10 weeks, meeting with Turkish industrialists to aid in stimulating the country's economy, as well as taking a short business and pleasure trip in which he was joined by Mrs. Silverstein in Italy. Saul is to be honored with a decoration from the Belgian Government for his previous work in behalf of that country and is the only member of more than 20 teams to be singled out for such distinguished recognition. Daughter Phyllis was graduated from Wheaton College last June and was married on August 22 to Samuel Rubinovitz '51. Lee Silverstein received the master's degree from the Harvard Business School in June and Barbara has completed her sophomore year at Wheelock College.

Elsewhere in the junior league of the Class, two have entered M.I.T. this fall with the Class of 1958. Helen A. Johnson, daughter of Algot J. and Mrs. Johnson of Gloucester, Mass., is the first 1921 daughter to attend the Institute. She has chosen course X. Jonathan D. Senzer, son of Sidney and Mrs. Senzer of Mamaroneck, N. Y., will follow course XV, as did his older brother, Stephen '50. The second generation at M.I.T. club now totals 59 names since 1942. Claire Jones, daughter of the late S. Murray Jones and a graduate of Bradford College and Katharine Gibbs School, has a job at Technology in the Selective Service Department, while her brother, Malcolm, is in the sophomore class. Richard N. Wenick, son of Joe and Mrs. Wenick of Caldwell, N. J., received his degree in architecture from the University of Cincinnati last June. Graduating with high honors, he received a prize for the most outstanding thesis. Reinald J. Chutter, son of George and Mrs. Chutter of Portland, Conn., received his degree in dentistry from the University of Penn-

sylvania last June. Also at the University of Pennsylvania, Alfred L. Clarke, son of Cac and Mrs. Clarke of Glen Ridge, N. J., received his bachelor of science degree in economics in June from the Wharton School of Finance and Commerce.

Dr. and Mrs. George Thomson announced the marriage of their daughter, Bonnie Jean, to the Rev. Dudley Weigand in Dorchester, Mass., last June. Richmond S. Clark, Jr., married Royanne Kelley in Baytown, Texas, in September. Phil and Edna Coffin of Mt. Lebanon, Pa., announced the engagement of their daughter, Dorothy, to Stanley Corbett. A junior at Cedar Crest College, Dorothy was planning a summer wedding. Featured on the sports pages is Captain Tim Anderson of the Harvard football team, son of Paul and Mrs. Anderson of Jamestown, N. Y.

The 1955 Alumni Register, a 700-page volume, can be ordered from the Alumni Association by those who wish an up to date list of class addresses, or your Secretary will furnish available data on request. Anyone having the addresses of the following will greatly aid the Institute's records by sending them to your Secretary at the address below: Vaclar Daseh, Jorge V. Davila, Andrew Deane, Louis L. Goselin, Mark V. Hamburger, John J. Hines, Jr., Francisco L. Lazo, Captain R. Luff Meredith, John R. Oliver, Gunnar Opsahl, Fred K. Petermann, Rosimond M. Raphael, Charles W. Tucker, Dr. Joseph F. Vesely. Adolph Denbin reports his address as 5701 Cross Country Boulevard, Baltimore, Md. Major General Franklin O. Carroll lives at 1107 Juniper Avenue., Boulder, Colo. W. Corydon Kohl now gets mail at P.O. Box 11, North Sutton, N. H. Edgerton Merrill, a former colonel, has returned to civilian life and is at 1205 15th Street, N.W., Washington, D. C. Charles L. Pool is still abroad and can be reached at AESB, Edificio Espana, Plaza de Espana, Madrid, Spain. Brigadier General Don G. Shingler's address is: Knappen-Tippetts-Abbett-McCarthy, UNKRQ, APO 59, care of Postmaster, San Francisco, Calif. New addresses have also been received for Allen D. Addicks, Dr. John Campbell, Jung-An Lo, William B. McGorum, Charles M. Palmer, Hugh D. Seaver and Carl Thumim.

To your home at Thanksgiving go the best wishes of Ray, Chick, Ed, Warrie, Bob, Ted and Cac. — CAROLE A. CLARKE, Secretary, Federal Telephone and Radio Company, 100 Kingsland Road, Clifton, N. J.

• 1922 •

Since writing the last Class Notes, Alumni Day in June gave the Class another opportunity to get together. We had quite a good turnout. Present were Parke Appel, Harold Berry, Bob Brown, Art Craig, Stu Dimmick, George Dandrow, Freddy Dillon, Buck Eacker, Warren Ferguson, Harry Fisk, Joe Foster, Morris Gens, Dewey Godard, Earl Heitschmidt, Ed Hobbs, Jack Hennessy, Oscar Horovitz, Randy Hogan, Ted Miller, Winthrop Potter, Fearing Pratt, Bill Riley, Hyman Rosengard, Ray Rundlett, Bill Russell, Walt Saunders, Ros Sherbrooke, Hugh Shirey, Tommy Thomson, Bob Tonon, Stanley Turner, John Vaupel, Frank Wing and

your Secretary. Next year let's have an even larger group, particularly of those who live in Metropolitan Boston. For some of us, it may be later than we think.

Horace McCurdy was co-chairman of the M.I.T. 150 pound Henley committee which so successfully financed the trip of the crew to England. A note from Florence Stiles reports that she has been with the Du Pont Company in Wilmington in the Design Division of the Engineering Department for the last three years. She is more fortunate than most of us with respect to her working conditions. "The office building is in the country—fields and woods surround us. To drive into the country instead of a hurly-burly city is certainly one way to raise efficiency of the worker and provide a pleasant way of life work-wise." Friends and especially the coeds are invited to call at her home 815 Augusta Road, Western Hills, Wilmington. Bob Thulman's son, Robert Deane, was married to Jean Meredith Parker last June at Dayton, Ohio. Ev Vilett had to miss Alumni Day festivities because of his duties at the National Open Golf Tournament at Baltusrol. Ev was in charge of the admissions to the grounds and Club House which must have been quite an undertaking considering the size of the attendance. Colonel Benjamin A. Dickson last spring toured Europe as a member of a group of 42 newspaper correspondents who re-visited Europe 10 years after the invasion of Normandy. As reported in the Bridgeport *Post* Colonel Dickson came back convinced that "the Communist party in France is declining" and that behind Chancellor Adenauer and his Bonn government there stands a solid West Germany. Colonel Dickson who is also a graduate of West Point served with the Army in Siberia and the Philippines prior to resigning his commission in the 20's. He returned to the Army in 1938 to perform intelligence work and in World War II saw action in North Africa, Sicily and Normandy.

Crawford Greenewalt, our most degreed classmate, got another last June from New York University as Doctor of Commercial Science. George Dandrow was a guest speaker on May 6 at the meeting of the Connecticut Building Congress, Inc., his subject being "The Advantages of a Building Congress" on which subject he should be fully qualified inasmuch as he is president of the New York Building Congress. Last spring Reverend Lester C. Lewis gave a series of five lectures on international relations. These talks were sponsored by the American Association of University Women. Bob Brown's son, Robert Hall Brown, Jr., was married last July to Joyce Hemenway, Mount Holyoke '53 in Leominster, Mass. The bridegroom graduated from M.I.T. last February. Dwight Vandevate, Vice-president in charge of manufacturing of Gleason Works in Rochester was elected last spring to the Board of Directors of the Central Trust Company of Rochester. Latimer F. Hickernell, chief engineer of Anaconda Wire and Cable Company has been elected to a four year term as director of the American Institute of Electrical Engineers. Hickernell was chairman of the Technical Program Committee for the general meeting of the A.I.E.E. held

last winter in New York. This meeting was the largest in the history of the Institute both in attendance and in the number of papers presented. Hickernell has been chief engineer of Anaconda since 1933. Edward E. Bigelow was appointed last August assistant engineering manager of Stone and Webster Engineering Corporation. He has been with Stone and Webster since 1923. His home is at 18 Cheever Street, Milton, Mass.

Again the sad duty of reporting deaths. Harold S. Clemens died June 17 at the Pocasset Massachusetts Hospital after a long illness at the age of 56. Clemens retired from the Du Pont Company in 1953. Luther Reynolds of 19 Beverly Road, West Orange, N. J., died June 15 at the Orange Memorial Hospital from injuries suffered in a fall on June 8. Reynolds was manager of James E. Reynolds and Company cotton commission firm of 40 West Street, N. Y., which was established by his grandfather in 1864. He is survived by his widow, a son, three daughters and two grandchildren. Lee Allan Swem died May 25 in Bronxville, N. Y. Swem, a patent lawyer, was at the time of his death vice-president in charge of international operations of the Foster Wheeler Corporation. He is survived by his widow and two sons. The sympathy of the Class is extended to the relatives of these deceased classmates.

Colonel Randall J. Hogan, Commander of the Rossford Ordnance Depot in Toledo was presented with the Army's Award of Merit for Safety last August shortly before his retirement after 32 years in the service. Randy and Mrs. Hogan are planning a trip to Europe this Fall. Plans after that are still in the making.

New addresses: Rudolf F. Whitelegg, 42 E. Central Avenue, Moorestown, N. J.; Robert K. Thulman, 1317 F Street N.W., Washington 4, D. C.; Robert N. McClellan, 16 Williams Street, Wrentham, Mass.; Ting H. Chin, 15 Lane 131 Hanchow Road, Taipei, Taiwan, Formosa; Chang T. Chien, 70 Lane 135, Chung Shan Road, Taipei, Taiwan, Formosa; George Devlin, 156 Pauline Street, Winthrop, Mass.; R. A. Stone, 375 Oronoque Road, Milford, Conn.; Joseph Yormak, 1015 Washington Avenue, Brooklyn 25, N. Y.; John R. Sheffield, Jr., 45 E. 66th Street, New York City 21; Keith W. Robbins, Atlantic District Sub-Office, Corps of Engineers, U.S.A. APO 677, c/o Postmaster, New York City; Adolph J. Freiheit, 17 Woodhollow Lane, Huntington, N. Y.; Lloyd A. Elmer, Bell Telephone Laboratories, Whippany, N. J.; Arda Boghosian, 67 Parnell Street, Weymouth 88, Mass. — C. YARDLEY CHITTICK, Secretary, Heard, Smith, Porter and Chittick, 41 Tremont Street, Boston 8, Mass.

• 1923 •

The Class was deeply shocked by the death of Dr. Compton in June, particularly so as he looked so well and healthy on Alumni Day. All of us miss a great friend and counsellor. At the memorial services held, the Class was well represented, many attending as members of the Faculty or in other official capacity.

Alumni Day saw many members of the Class in conspicuous places. Ray Bond, the retiring president of the Alumni As-

sociation, presided at the day meetings and the evening banquet. Hugh Ferguson, the newly elected president, took over the duties and responsibilities from Bond. How did it happen? Well, it seems that they planned it as classmates in High School and perfected the details as roommates at the Institute. Congratulations go to both of them! Richard L. Bowditch was the principal speaker at the Luncheon. His subject, "Our Greatest Resource," struck a sympathetic chord with the audience which, in spite of the chilly weather, listened attentively throughout. Nice work, Dick! At the meeting of the Executive Committee of the Class, it was voted to make Wolcott A. Hokanson, the new controller, an honorary member of the Class. The election was announced at the banquet that evening and Wolly left the speaker's table to spend several minutes at our class tables. We wish him every success in his new responsibilities. Wolly's election as an honorary member of the Alumni Association was also announced at the banquet. The following members of the Class attended either the luncheon or banquet, or both, some accompanied by their wives: Allen, Albert, Bond, Bowditch, Bricker, Brown, Burchard, Ferguson, Frank, Greenblatt, Greenough, Griswold, Haven, Henderson, Holden, Hooper, Johnson, Kattwinkel, Kaufman, Lange, Lockhart, Pennypacker, Putnam, Russell, Skinner, Spilios, Sterling, Stratton, Tyler, Valentine and Zimmerman.

Penn Howland has booked reservations for our 35th reunion, June 12-16, 1958, at the East Bay Lodge, Osterville, on Cape Cod. The Lodge was inspected by Bond and Russell following a thunderstorm, July 21. It is a delightful place, with all facilities necessary to make our reunion a success. While the lights were out that day and again when hurricane Carol struck, the manager promises they will be back on again ready for us in 1958. John Burchard, (IV), Dean of M.I.T.'s School of Humanities and Social Studies, has been elected the 29th president of the American Academy of Arts and Sciences.

General Herman Safford (II), (USA Retired) is president of the Ohio Rubber Company and has been elected to the Board of Directors of the Osborn Manufacturing Company. Alfred E. Perlman (XV) is helping Robert R. Young reorganize the New York Central. He was formerly executive vice-president of the Denver and Rio Grande Western Railroad. Here's hoping they decide to put a new station at Harmon, otherwise, we'll use the Pennsylvania! Stanley W. Lovejoy (VI) has been appointed manager of the Cutting Tool Research Department at the Pratt and Whitney Division of Niles-Bement-Pond Company in West Hartford, Conn. Roscoe H. Smith (XIV), secretary of the Reliance Electric and Engineering Company, has been named general manager of the Cleveland Engineering Center Building and Development Fund Campaign. The Society has set a target to raise \$1,378,000 for a new engineering center. The White Plains Community Chest is raising \$191,616 — hope we both make our goal! Admiral (retired) A. G. Noble (II), Executive V. P. and Director of the Nordberg Manufac-

turing Company, discussed scientific achievements of the Institute before the Milwaukee University Club, recently, Robert C. Sprague (XIII), Chairman of the Board of the Sprague Electric Company, spoke on "The Outlook for Electronics," before the Boston Investment Club. Sez he, "You haven't seen anything yet!" Dr. Bernard Lewis, one of the country's leading munition experts, helped investigate the blast and fire on the aircraft carrier, *Bennington*, last May. Jerome A. Watrous, treasurer of the Northampton Cutlery Company, was commencement speaker at the Northampton (Mass.) High School in June. In that city he has taken an active part in community affairs — he is past president of the Rotary Club, the Community Chest and the Y.M.C.A. He is also chairman of the Finance and Executive Committees of the Clarke School for the Deaf and a director of the local Chamber of Commerce. We regret to report the passing of Raymond O. Brink of Bristol, Conn. He had been product engineer of the New Departure Division of General Motors Corporation for the past 27 years and had been active in many community and church affairs. Our sympathy goes out to his family. Mr. and Mrs. George W. Bricker announced the marriage of their daughter, Elizabeth Louise, to Warner Bruce Johnson, on August 7 at Shaker Heights, Ohio. Congratulations!

Charles M. Mapes, assistant chief engineer of A.T. and T., made an oral report, "Telecommunications in Mobilization and Emergency," in Washington on June 9 before members of the Executive Departments of the Federal Government, which are directly concerned with defense matters. His talk was illustrated by many illuminated charts thrown upon a screen. A resumé appeared in the Bell Telephone magazine (summer issue). Incidentally, the Bell System is completing a by-pass switching center here in White Plains, a shorter distance from your Scribe than one of Ray Bond's drives on the golf course at Hyannisport. — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 North Broadway, White Plains, N. Y., WENTWORTH T. HOWLAND, *Assistant Secretary*, 1771 Washington Street, Auburndale 66, Mass.

• 1924 •

Maybe we're mellowing in our old age, or maybe it was the presence of our wives, but whatever the reason we were all agreed that the 30th topped even our 25th reunion. Everything was perfect, the weather, the location, the service. It was one of those affairs where we all hated to leave and said, "Why don't we have these more often?" George Knight and his committee had seen to everything. The capacity of the Sheldon House was 100, and we had only a slight overflow which was readily taken care of at a nearby motel. There was a bit of golfing, and some of the ardent fishermen put out to sea, but mostly we just sat, got to know each others' wives, and engaged in a lot of good talk. Even the die-hards who were against the mixed reunion idea had to admit that, instead of putting a damper on the affair, the wives were completely additive. Maybe we were amazed at what

a charming bunch of gals we'd married. Center of attraction was the Robinson's new daughter. Everyone had to take a turn at feeding her, just to see if he still had that kind of bottle-handling technique.

Long-distance honors were shared by Bill MacCallum, Californian native son, the Roigs from Puerto Rico, the Amezagas from Havana, and George Fertig from Birmingham. Present in spirit was Dolph Santos who wired from Rio, "Too busy to go North to join you guys, too lazy to write, send you, Ed Moll, all other twenty-four fellows best wishes." The New York contingent headed by Wink Quarles ran the Saturday night banquet and very well, too. The evening started in the not-too-late afternoon with a cocktail party and eventually the banquet got under way. Lobby was our guest, and he and Wink did what speaking was done, but the major portion of the evening was devoted to the distribution of a staggering array of prizes, corralled by Ed Moll. Ed himself had contributed personalized man-size ash trays for everyone there. Jackie Tryon guessed the number of beans in a jar to win a set of M.I.T. Wedgwood plates; George Knight got a case of oil for his expertness at guessing a collection of nuts and bolts; and Jack Lehman was all set up over winning a case of Scotch — until he discovered they were the little shot-size bottles! Everyone went away with something. Paul Cardinal waited until later, and in mid-summer shipped us all a choice selection of assorted vitamins.

George Parker had appointed Nate Schooler to head a nominating committee which reported at the banquet. Their selections were, needless to say, elected by acclaim, so that your officers for the next five years are: President, Prescott H. Littlefield; Senior Vice-president, George W. Knight; Vice-presidents, Russell W. Ambach, Miguel F. Amezaga, William H. McCallum, Frank D. O'Neil, William W. Quarles, William D. Rowe; Treasurer, G. Raymond Lehrer; Secretary, Henry B. Kane. Our Class Agent in the Alumni Fund, Frank R. Shaw, is appointed by the Fund Board, but we re-elected him anyhow just to make it unanimous.

We officially broke up on Sunday, but a number journeyed up to Cambridge for Alumni Day on Monday. There were 29 of us at the '24 tables at the Banquet that night. Our cocktail party beforehand started as a comedy of errors with too many rooms reserved at one stage, then no room at all, but it came out all right in the end. From the amount of picture-taking that went on it was certainly one of the best-recorded reunions in history. If any of you took black-and-whites will you *please* send your Secretary a set of prints now. You'll never be able to find those negatives later on when we need them. Frank Shaw reports that our 30-year gift to the Alumni Fund was most gratifying. Heretofore we've been averaging about \$4,500 a year. This year we went over \$9,000. That's excellent. As an indication of what this will mean for the future, the Class of 1925 is already laying plans to beat our gift, a record so far for 30-year classes. Let's hope they and lots of others do it.

A lot of news has accumulated over the summer, but since so much space has been devoted to our big binge, we'll save most of it for next time. A couple, however, can't be overlooked. Many of you will be shocked and saddened to learn that Carlo Vicario was killed last July in an accident in San Francisco. No details in the clipping sent on from the West Coast by Blanchard Warren. Since retiring a couple of years ago Carl had been travelling quite a bit, ending up in San Francisco as consultant for a building contractor. On August 24 Nate Schooler left for Israel as a member of a 12-man businessmen's commission. At the invitation of the Israeli Prime Minister they will study economic conditions. His son, Jerry, went with him and Freda joined them in September.

Next month we'll catch you up on some of the other news of importance such as who is the new Singer V.P., what does the anatomical headline "Ludlum Head Chest Aide" mean; what British Bishop recently visited his ex-president nephew; what's the latest in the Simond's Saga? Don't miss the next thrill-packed issue! — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

The most important news during the coming year will be concerned with the 30th Reunion, and I hope by the time you read this Review that the first notice concerning the reunion will have reached you and you will have made whatever response requested. If you haven't taken care of that matter, do so promptly because we are bound to make the 30th Reunion the best one ever, and we need your hearty co-operation to accomplish this. 1954 Alumni Day seems rather ancient history by now, but our Class was well represented at the various affairs and, for the record, the following appeared at one or more of the day's activities: Gates Burrows, Sam and Mrs. Caldwell, Bill Colby, Al and Mrs. Goleman, Sam Glaser, Bob and Mrs. Hodson, Jim Howard, Ed Kussmaul, Mac Levine, Ed Lee, Henry and Mrs. McKenna, Ed McLaughlin, Fred Rice, Ave and Mrs. Stanton, A. B. and Mrs. Whitehouse and yours truly. It was particularly pleasing to have classmates Gates Burrows, on from California, and Al Goleman from Texas. Too few of the Class get back to New England from far off places except at the five year reunions. Ave Stanton has supplied me with two bits of news, one of which is reported with deep sorrow, namely that Martha H. Betts had written that her husband, John Carroll Betts died suddenly October 15, 1953. On a happier note, Ave met Don and Ida Tabor on the beach at Hyannisport, Mass., while enjoying a few days' vacation during July. We noted with considerable pleasure that Tom Killian, who has been chief scientist of the Office of Ordnance Research, U.S.A., has been appointed dean of the School of Engineering and Architecture at the Catholic University of America, Washington, D.C. I met Tom for a few moments in New York early in September but found he had then spent only one day in his new position and, although he is looking forward with considerable

interest to his new work, he had certainly not had time to learn a great deal about his problems. He had been delayed taking over his new position by the recent death of his father. Two other items of interest are that E. E. Richardson, who has been general superintendent of the Cambridge Gas Light Company, has recently been named the assistant general manager of that company and Ken Reynolds, head of the Department of General Engineering, at the University of Southern California is presently on a year's special leave from that institution, having accepted a Fulbright appointment in Baghdad, Iraq. Ken will be lecturing on civil engineering at the College of Engineering in Baghdad. Just as this goes to press, Don Severance has informed me of three members of the Class who have been nominated by the Alumni Association to serve on M.I.T. Corporation Visiting Committees. They are as follows: Theodore Lonnquest, Aeronautical Engineering; Marion Boyer, Chemical Engineering and Tom Price, Department of Humanities. — F. L. FOSTER, *General Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

• 1926 •

Yesterday morning seemed like a good time to write class notes. Hurricane Edna was due at Pigeon Cove some time during the day and there was little else to do other than sit around and wait. However, after several attempts, I found that frame of mind has much effect on the way words flow off the tip of my Parker 51. I stopped every few moments to see whether or not everything was battened down, whether there were any additional items around the yard such as flower pots, small boards or garden chairs that can become destructive missiles when propelled by winds of 100 m.p.h. In between, I could not stay away from the radio to follow the course of the hurricane, until finally the electricity shut off and eliminated this diversion. By then, however, high winds were driving gallons of water beneath doors we had neglected to protect and around windows that could have had double panes attached, had we expected such a mighty downpour. This time, we were on the outer circumference of the hurricane and winds did not reach over 70 m.p.h., so we suffered no damage even though it was a most disagreeable day. However, just before the phones went out, Pete Doelger called and asked if we would come to dinner — an invitation we had to accept with reservations. The storm did pass out to sea by 6 P.M. and by removing a few heavy branches from our path, we were able to drive over to Pete's place in Folly Cove. Their electricity had gone off but the candlelight and glowing fireplaces really enhanced their 200 year old home and a neighbor who did not depend upon electricity brought in the roast, perfectly cooked just as we finished cocktails. With Pete's daughter Charlotte and sons Peter, Bill and Tom giving deluxe table service and washing all the dishes — it made a pleasant ending for an unpleasant day.

This morning with the hurricane reported blowing itself out off the Nova Scotia coast, we have brilliant sun, crisp northwest winds and visibility to the hori-

zon. Actually, while hurricane Edna was not a pleasant experience, the damage caused was minor compared with hurricane Carol of a couple of weeks ago. The yachting season ended very abruptly on August 30 with Carol completely cleaning out many harbors. We were most fortunate at Rockport and lost no boats, although a great many were sunk or banged up with masts broken and holes punched in them by other craft. Those of us who haul our Stars out after each race and put them on trailers, came through without a scar but we were lucky too. The Boston Harbor Star Fleet had several of their boats blown right off their trailers by the wind, which is almost unbelievable, when you consider that the keel on a Star weighs 900 pounds. Speaking of Stars and luck, we really had it for our North American Championship Races August 23-28. There were five scheduled races for the week with a rest day on Thursday. Rest day turned out to be the only bad day of the week but ashore it was pleasant. Lady Luck was truly with us because we were bracketed with bad weather not only including the hurricanes that came later. Marblehead Race week came before our regatta and on Wednesday of their week, 80 boats capsized in a bad squall.

During our Star Championships, three '26 men visited Rockport but unfortunately, we saw only one of them for just a moment. It was one of the busiest weeks I have ever known and I guess I was a bit hard to find. However, one day as I stepped off the Committee Boat after the races, our yacht club steward handed me a note written on a scratch pad of the Ritz-Carlton, Montreal, "Dear George — Found you were busy today with the Stars. You have written so much about this area, I had to see it for myself and it's o.k. Sorry I missed you, Bernie Morgan." I am sorry I missed you too Bernie. Try it again. I also learned from Bud Wilbur some time later that Earl Wheeler had been visiting him but upon learning of our activities he postponed looking us up until next visit, which we hope will be sometime soon. After the last race on Saturday I brought two members of the race committee home with me to figure out some results prior to the Winner's Dinner at which the Governor was guest of honor. Tom Green had driven down from Marblehead where he was visiting and Ruth persuaded him to wait to say hello but I was unable to make Tom stay any longer than just to say hello. I am sorry Tom, that you did not stay while we figured out our results because it would have been very interesting to you with your mathematical mind.

Our prizes were unique in yachting circles and our method of awarding them was also unique. There are always daily first, second and third prizes at one of these events as well as first, second and thirds for the Series, making 18 in all. We had talked the leading artists of Rockport into contributing paintings for our prizes and they truly outdid themselves. The dollar value of the paintings was over \$3000 but the value as prizes was unmeasurable. Each skipper entering the contest was given a ballot at the start on which he listed his 18 choices of paintings in order. What Tom Green missed was

real fun. When it was over, we were amazed to find that while the Series Winner, Jack VanDyke of Milwaukee, of course got his first choice of paintings, most of the other winners also got about what they wanted, regardless of where they stood on points. Sometime, Tom, I'd like to sit down with you and have you unscramble the mathematics of why we came out this way. It pleased us no end but I cannot figure out the why of it.

I mentioned above that the Earl Wheelers were visiting the Wilburs at Rockport. Yes, Bud and Lillian Wilbur finally succumbed to our sales talk about Rockport and hired an attractive place high on a hill overlooking the bay through early October. They seem to have adopted Rockport as their second home. Bud has been seen visiting the local art supply store often and has turned out several oil paintings already. I'll have him in a sailboat yet. This first due date for the notes came down on me so fast that I haven't had an opportunity to put together the many fine letters received from classmates during the summer but that assures you that there will be notes next month. One of these letters from classmates, however, was timed to arrive just as our Star Races started. Bill Vaughan had noted the dates from the last issue of the class notes and wrote a very much appreciated note wishing us well. It was a very thoughtful thing to do. Next month we will have news for you from Gordon Spear, Barney Billings, Dick Pough and many others. Meanwhile, how about a word from you about your recent experiences. — GEORGE WARREN SMITH, *General Secretary*, E. I. duPont de Nemours and Company, Inc., 140 Federal Street, Boston, Mass.

• 1927 •

We regret to record the death of Volney C. Finch, Professor of Mechanical Engineering at Stanford University. He died on November 9, 1953. In 1930 Prof. Finch was head of the Aeronautical Engineering Department at Alabama Polytechnic Institute. He joined the faculty of Stanford University, and except for his active Naval duty during World War II, remained at Stanford until his death. He was author of a book entitled *Jet Propulsion — Turbo-Jets* which was very well received in aircraft engine manufacturing circles.

Howard P. Ferguson who has been manager of the Standard Oil Company of Ohio's #2 refinery in Cleveland, will be Ohio's manager of Lubricating Oil Sales. We hope later to have some word from Howard as to what it takes to achieve the metamorphosis from refinery manager into sales executive. James K. Small, manager of the Patent Division of the Standard Oil Development Company, is co-author of a paper entitled "The Increase in Corporate Patent Work" which appeared in the June issue of *Chemical Engineering Progress*. The paper emphasizes the increasing importance of inventions in the mechanical field, with the result that more than one-fifth of the 40,000 to 50,000 U.S. patents granted each year deal with chemicals. Rear Admiral Leslie A. Kniskern, a postgraduate in naval architecture and marine engineering at M.I.T., has completed a two year tour of duty in Paris

as the Navy's European shipbuilding representative. He returns to this country to become inspector general for the Navy's Bureau of Ships with headquarters in San Francisco.

Stauffer Chemical Co. has named William Engs assistant to the president with headquarters in New York City. He was formerly manager of manufacturing of the American Chemical Division of American Cyanamid Company. Standard Oil Development Company has appointed Donald L. Campbell to the position of associate director of the Process Division. A description of a recent technical paper by Campbell appeared in the July, 1954, Notes. Lew Baker is devoting considerable time to a unit which converts the usual CO₂ fire extinguisher to a dry powder unit. His address is c/o The Bawkin Machine Corporation, 30 Burtis Avenue, New Canaan, Conn. Howard W. Page's name has figured most prominently in the press. He was chairman of the negotiating team of oil companies which brought to an agreement the three-year old dispute between Iran and Britain over Iran's ownership of its oil industry. He is a director of Standard Oil Company (N.J.).

The following members of our Class attended Alumni Day this year: E. Q. Adams, D. C. and Mrs. Arnold E. Chase, E. A. Church, J. F. and Mrs. Collins, A. J. Connell, E. N. Dube, H. E. and Mrs. Edgerton, H. E. and Mrs. Franks, F. and Mrs. Marcucella, H. A. Moineau, S. Peraner, W. J. Sherry, E. F. and Mrs. Stevens, W. L. Taggart, Jr., A. Thormin. At the Alumni get-together Harry Franks sat down and suggested that next year all of our group should try to get together somewhere before the dinner. This seems like a good idea for those who will be making the arrangements.

New addresses received: Jose D. Dominguez, Puerto Rican Telephone Company, P.O. Box 4275, Santurce, Puerto Rico; Charles L. Douglas, 163 Thrift Street, San Francisco 6, Calif.; Colonel William R. Frederick, SSO Hq. USAFFE, APO 343 c/o P.M. San Francisco, Calif.; Sam S. Meadows, Marvel-Schebler Products, Transmission Department, Box 442, Decatur, Ill.; Dan C. Metzger, 283 Avenue C, NYC.; Rene E. Paine, Jr., PO Box 153, Ogunquit, Me.; Lenvik Ylvisaker, Continental Can Company, Inc., 100 E. 42nd Street, N.Y.C. — JOSEPH S. HARRIS, *General Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

• 1928 •

On Alumni Day, June 14, the following twenty-eight men were on hand for the festivities; Maurice Beren, Sidney Brown, William Carlisle, John Chamberlain, Mr. and Mrs. Dudley Collier, Mr. and Mrs. Joseph Collins, Chester Day, Mr. and Mrs. James Donovan, Mr. and Mrs. Roland Earle, Carney Goldberg, Mr. and Mrs. Robert Harris, Thurston Hartwell, Walter Hildick, Mr. and Mrs. Ralph Jope, Mr. and Mrs. Arthur Nichols, Walter Smith, Mr. and Mrs. Douglas Tooley, and Abraham Woolf. Most of the men attended the Banquet and experienced the wonderful spirit of fellowship. We earnestly hope that more of our class members can make the trek to Cambridge to join in these annual

gatherings. It is an excellent way to keep in touch with the Class and to renew old acquaintances.

It is with deep regret that we record the passing of George Moon DeCamp. George died at his home, 3 Jefferson Road, Winchester, Mass., on Wednesday, July 21, after a long illness. Following his graduation, George joined the Engineering Department of the Hudson Motor Car Company, Detroit. More recently he had been associated with Atlas Powder Company, Zapon Division, Stamford, Conn. Among his activities were A.F. and A.M., Boston Rubber Group — A.C.S., V.M.C.C.A., and many years of Boy Scouting. George leaves his wife, Barbara Lord; his daughter Joan; and son George M., Jr. — GEORGE I. CHATFIELD, *Secretary*, 49 Eton Road, Larchmont, N. Y. WALTER J. SMITH, *Assistant Secretary*, 15 Acorn Park, West Cambridge, Mass.

• 1932 •

It has been a good summer for class news. Quite a few of our classmates have made names for themselves. We didn't have too big a turnout at Alumni Day. Tom Sears sent me the list, which included himself, Bill Pearce, Al Dietz, Fred Green, Bill Hallahan, George Kerisher, Ken and Mrs. Lucas, Bunny Nealand and Aviator Cruz-Bustillo, who I am just surmising dropped in from Havana. I suppose that is not a bad turnout and, as I remember it, more than last year, but what we are aiming for is 1957!

Most of you have probably heard of the new responsibilities of our illustrious Carroll Wilson. For those who haven't I will relate that he has become vice-president and general manager of Metals and Controls Corporation, Attleboro, Mass., leading manufacturer of rolled gold and silver plate, thermostatic motor protectors, thermostatic metals, electrical contacts, circuit breakers, relays, and the like. This is a very substantial activity, employing 2,000 people at its main plant in Attleboro and has branch plants in Holland and Mexico, which will no doubt require regular visits for the new general manager. Carroll had been on the Board of this company for three years while still holding down the post of director of Industrial Development for Climax Molybdenum, since resigning as general manager of the Atomic Energy Commission. Carroll hasn't reported in a new home address yet, but no doubt he, Mary and the children by now have one of those attractive country places that the Wilsons always seem to find.

I had no sooner reported Jim Harper being off for Korea than a note from Jim, aboard the USS *Jefferson* enroute to Alaska, advised that his orders were changed for a two-year station at Fort Richardson near Anchorage, where he is to be Army engineer for the theater. It is going to be an interesting time for Jim as there is a good deal of new, permanent construction going on in that important frontier of our country. For those of you who drool at the thought of hunting and fishing, Jim really has the prize—he is only 40 miles from the Matanuska Valley farming center, which is right in the middle of it. He has promised to tell me personally, and perhaps I can pass it on to some of you loyal ones who send in notes, of

any tips on gold or uranium strikes! Benny Archambault, whom I have reported as having an interesting life as vice-president and general manager of the M. W. Kellogg Company, became president and a director of Stewart-Warner Corporation this summer, assuming his post June 14. Stewart-Warner is well known to all of us and I know we all wish Arch the best of good fortune in this major responsibility. I haven't as yet learned of his new home address, but Stewart-Warner Corporation, Chicago 14, will reach him.

Don Whiston has left his job as chief, Construction and Supply Branch, Division of Raw Materials for the United States Atomic Energy Commission, to become general field superintendent for Chemical Construction Corporation, subsidiary of American Cyanamid Company, which handles the building of Chemico's specialized plants such as sulfuric acid, ammonia, nitric acid, phosphoric acid, and the like. Don's new address is Mianus Road, R.F.D. Cos Cob, Conn. Some of you may remember that he married May Christie, a Simmons College girl, and they have produced three children. He still lists as hobbies, fishing and repairing TV sets. The latter strikes me as an extraordinary hobby, probably particularly useful, however, for his friends, since TV servicing is such a costly affair. John Person, our much traveled engineering colonel, is now back in the country as Ohio River Division engineer with headquarters in Cincinnati, after just completing a tour of duty as commander of the port of Leghorn, Italy, under the U.S. forces in Austria. Having spent two nights in Leghorn within the last few years, I am sure that John is glad to be back for that is not one of Italy's romantic spots. Al Berghell writes all the way from Morro Bay, Calif., where he is practicing as a consulting engineer. I gather from his notes that he is conducting some kind of training, for one of the big things on his job is working with people and he is most interested in having men who think attend seminars on the "learning curve here in Morro Bay." The reference to philosophical thinking in the questionnaire stimulated Al to comment that he thought we might all become philosophical when we think — "What is going to happen to man combined with hydrogen and cobalt?" One other thing Al picked me up on — my question on wives and children. He tells me he will bring all his wives and children, being, parenthetically, only one. I am wondering if he did think we thought we had a couple of active Mormons on our list when I blocked out that question!

Remember all you readers, you are the ones who make good notes, so sit down immediately and drop me a line. — ROBERT B. SEMPLE, *Secretary*, Box 111, Wyandotte, Mich. *Assistant Secretaries*: WILLIAM H. BARKER, 45 Meredith Drive, Cranston, R. I., ROLF ELIASSEN, Room 1-138, M.I.T., Cambridge 39, Mass.

• 1934 •

It's a long, long time from June to November, but memories of 1934's twentieth reunion at Portsmouth are still green in the hearts of the 80 classmates who attended. Fifty of these brought their wives

to this first non-stag reunion. A memorable week end was had by one and all thanks to the indefatigable efforts of Carl Wilson and his able reunion committee as well as to the arrangements provided at Wentworth-by-the-Sea. Of course the most important ingredient contributing to the success of the reunion was the good fellowship brought by those who came. Carl deserves special plaudits from the Class and from the Institute for the extraordinary job which he did. The Alumni Office received from him a detailed report dealing with reunion organization procedures which should be of assistance in the future planning of all classes. He also prepared the following account of the reunion. The Class accords him a heartfelt "well done."

Friday, June 11, 1954, was a beautiful day in Portsmouth and early arrivals were greeted by the King Crosbys who had arrived at the Wentworth on Wednesday. The afternoon was taken up by registration, selection of the correct size of souvenir caps and much talk. Happily the ladies' red caps were becoming to them, which is more than could be said for the men's long-billed models. There was golf for some and others ventured to the swimming pool and were chagrined to find it not ready for use. These settled for lounging about and sunning. The pitch and putt course was very popular partly because it afforded a view of new arrivals.

A cocktail party was held at the appropriate hour. An ample quantity of refreshments disappeared in what seemed to be a very short time. After an excellent dinner some played bridge and others attended a bingo party at the Wentworth theater. After this party, the most stalwart accepted the invitation of the Class of '19, also holding a reunion at the Wentworth, to join them in square dancing.

Saturday morning dawned bright and clear. Golf, swimming, tennis, horseshoes and pitch and putt golf were enjoyed by many, with a sizable group adorning the rocking chairs on the porch. As new arrivals kept coming, many fond memories were reawakened by the appearance of old friends. Some took a boat trip to the Isle of Shoals in Portsmouth Bay. During the afternoon some of the ladies enjoyed a historical trip through the old houses at Portsmouth and a tea at the Hotel Rockingham. Larry Stefn tried to organize a softball game but found that the class members were getting a little to stiff in the joints for that type of activity. However, golf and tennis matches were held and the golf prize was won by Charlie Zercke and the tennis prize by Al D'Arcey.

Fabulous hors d'oeuvres were featured at cocktail time. These, along with the cocktails were rapidly absorbed. The party was in full swing when interrupted by a brass band which marched down the porch and led the reunited Class to its banquet in the ballroom. The ladies attended a separate banquet of their own after which they joined the festivities in the ballroom. Obie Denison entertained with cheerleading, piano playing and singing of many Tech favorites. Phil Kron then showed class movies after which George Struck appeared in Bavarian attire complete with leather shorts and false

rubber nose and presented an extremely amusing original lecture illustrated by beautiful colored slides.

Following this there remained the distribution of prizes which had been donated by the men as representative of the products of their companies or of the type of work in which they were engaged. For having come the greatest distance Bob Moody won a model locomotive cylinder hand-made by Frank (Choo-choo) Moore. Representing easily the greatest contribution in personal man-hours this scale model operated exactly as a full-scale locomotive cylinder simply by blowing air into the steam inlet. Bill (and Caroline) Mills took the prize for the most children hands down — with five. Jerry Minter won his by being first to mail his reunion reservation. King Crosby's luck rested on having arrived first at the hotel. Irving Geltman was the first married. He won a second prize by claiming the oldest child. No doubt the odds were in his favor! Not to be outdone, Dean Dadakis took two for being the most recently married and having the youngest child! Lou Frank was judged the handsomest bachelor by an impartial jury of three of the wives. Irvin came through as the baldest. It was evident that competition is creeping up on him. The classmate thought to have changed the least was Al D'Arcey. The remaining prizes (there were 296 items in all) were distributed by drawing. An item worth special mention was Frank Milliken's sparkling titanium oxide "diamond." The Committee was most grateful for this generous outpouring from the class members.

During this program, President and Mrs. Killian, guests of the Class of 1919 at their banquet, dropped in to pay their respects. By some lapse in the laws of chance it was found that the Killians held the next two winning numbers. Jim responded with a few well-chosen humorous words and all were much pleased by his unexpected visit.

Soon the ballroom was cleared for dancing but there was not much time before curfew. And so to bed. Sunday morning began with early rain followed later by fog. The class business meeting was held with Dick Bell presiding. New class officers for the next five years were elected. Hank Backenstoss was elected president. Other officers elected were Carl Wilson — First Vice-president, Frank Milliken — Second Vice-president, Les Doten — Treasurer and Walt McKay — Secretary. It was agreed that regional secretaries would be appointed to coordinate better class activities during the next five years. It was noted to hold the twenty-fifth reunion at Tech with wives and children to be invited.

After the meeting the sun broke through and the group made its way toward the beach for a clambake. This was held in true New England style on the shores of Portsmouth Bay under bright sunshine. The costume for this event included butcher aprons stenciled with the class numerals by Jink Callan. It was a sumptuous clambake with steamed clams, lobsters, frankfurters, corn-on-the-cob, watermelon and much more. After the feast, the crowd began to dissolve, with many a fond farewell and promise to get

together before the next reunion. Some started for Boston in anticipation of spending the following day taking in the Alumni Day activities. All in all, it was a grand weekend with old friends, and much better for having brought along wives. On to 1959!

Alumni Day at the Institute was enjoyed by some 30 members of the Class with a strong showing of wives. Eight of the 30 had been unable to get to Portsmouth. The evening banquet was festive as always. It was Dr. Compton's last appearance and those who were present might later have remembered that they were also present at his first appearance at Tech — at freshman camp in 1930. The Class will treasure his memory. Hank Backenstoss has sent out an address list of and to all who mailed in reunion questionnaires. Should any others want this list, please write (and send your news) to yr. humble and obt. servant. — WALTER MCKAY, *Secretary*, Room 33-211, M.I.T. Cambridge, Mass.

• 1937 •

This is the first time, I think, that we have had no engagements or weddings to report! Alumni Day was attended by 10 fellows: Ross E. Black, Raymond Dreselly, Josiah Heal, Mortimer Nickerson, Philip Peters, Curtis Powell, Matthew Rockwell, Leonard Seder, R. R. Weppeler and Walter Wojtczak. The Alumni Association nominated the following to be alumni members of an M.I.T. Corporation Visiting Committee: William Bergen for the Division of Industrial Cooperation and Leonard Schiff for the Department of Physics. Seton Williams, a retired Navy commander and consulting geologist and engineer in Tucson, died on May 16. Guy H. Ruggles'06 writes that Seton was admired and respected by the mining fraternity of the Southwest and his death was a shock to all of them. Colonel Frank Kowalski, Jr., has taken over the command of Camp Pickett, Va. During World War II, the Colonel served overseas in the G-3 section of Headquarters, European Theater of Operations. D. J. O'Connor, Jr., who was executive vice-president for the last six years of the Formica Company, succeeds his father as new president and general manager. His father was elected chairman of the board. Congratulations. George Ewald, of Short Hills, N. J., was recently appointed executive vice-president and technical director of Emjay Maintenance Engineers, a national organization of corrosion control, insulating and weather-proofing engineers and contractors supplying services and protective products for industrial and commercial buildings. George is also active in our local M.I.T. Club.

John L. Goheen was appointed district sales manager of castings for the American Brake Shoe Company. He joined the company in 1943 as a research metallurgist and in 1950 was transferred to market research and development.

Dr. W. S. Emerson of Dayton, Ohio was appointed assistant director of the development department of Monsanto Chemical Company's Research and Engineering Division. He joined them in 1941 and in 1951 was named assistant director in charge of organic chemicals

and plastics research. He is the author of many publications and a holder of 55 patents in organic chemistry. Colonel Joseph Smedile of Belmont, Mass. was recently transferred to South America. Herbert Goodwin, Assistant Professor in the Department of Business and Engineering Administration of the School of Industrial Management at M.I.T. gave a speech before the M.I.T. Club of Central Massachusetts in April. Besides being a consultant to several industrial plants, he is a staff member each summer at the Allan H. Mongensen Work Simplification Conferences at Lake Placid and Sea Island. Sydney Karofsky got a wonderful write-up in a wallpaper magazine. Here are a few highlights: He is president of Northeastern Wallpaper Corporation as well as watching over the operation of six retail stores, a department store concession in Boston and a small handprint firm. He was elected to the board of directors of the Wallpaper Wholesalers Association eight years ago, was chairman of the business and advertising committee which instituted National Wallpaper Style Month, and is a past-president of the New England Wallpaper Wholesalers Association and last year was elected president of the national organization. His outside activities include: Board of Trustee of Hecht House Neighborhood Group in Boston, director of Boston Stein Club (Alumni of M.I.T.), former member of Brookline, Mass., planning board, director of Pine Brook Country Club and chairman of the Building Committee and trustee of B'nai B'rith Hillel House of Boston University. In the past three years he has been designing and supervising the construction and furnishing of the entire building for the B'nai B'rith House. In appreciation of this service he was recently awarded a \$1,500 charter membership. Sydney majored in theory and application of design and color, integral parts of the Course in Architecture at M.I.T. Haven't received any letters or cards all summer for *The Review*. — WINTHROP A. JOHNS, Secretary, 34 Mali Drive, North Plainfield, N. J.

• 1939 •

Those of you that didn't attend our 15th reunion at Snow Inn on the Cape missed a very good time. We had over 100 men and women there, all of whom seemed to have had the time of their lives. Friday night there was an informal cocktail party and general get together with stories flying in all directions. Saturday night at the banquet there were favors at everyone's place. These favors ran from baby powder to ball point pens with many a laugh had by all. Door prizes were given out to the following lucky winners: Arthur Quint won a case of baby shampoo — those of you who have seen him lately know exactly how much he needs it. A pair of neolite soles was given to Harold Seykota and Gordon Pope for coming the farthest distance. Harold came from Portland, Ore., and Gordon from Puerto Rico.

There was a tie in the child production department. Maynard Drury and Wiley Corl were both proud papas of five children. Those of us with fewer than five wondered how they managed to look as

young as they did. Hal Seykota's name was drawn for four gallons of Godfrey's house paint and Esther Garber was very lucky in winning a box of cigars. Mel Falkof offered to donate a bathinette to the classmate present who became the father of a baby first, at least nine months after the banquet date. During the banquet everybody was given a lobster apron to take home as a souvenir.

There was a short business meeting at which time the following officers were elected for the next five years: President, William F. Wingard; Secretary-Treasurer, George Beesley; Assistant Secretaries, Michael V. Herasimchuk and Harold R. Seykota; Class Agent, Frederick B. Grant. Get your news into us and we will print it. — GEORGE BEESLEY, Secretary, 38 Homestead Road, Lynnfield Center, Mass. Assistant Secretaries: MICHAEL V. HERASIMCHUK, P.O. Box 495, Bethlehem, Pa. HAROLD R. SEYKOTA, c/o R. T. Collier Corporation, 714 West Olympic Boulevard, Los Angeles, Calif.

• 1940 •

With the summer vacation season over once again it is time to prepare the '40 column for *The Review*. First and foremost among the news items this month is that Bob Bittenbender has been selected as reunion chairman for our fifteenth reunion next June. Bob, as many of you will recall, did a grand job as the tenth reunion chairman. Following are excerpts from Hap Farrell's letter of August 3 informing your Secretary of Bob's selection:

"Thanks for your letter of the 28th (of July) and the reminder of the reunion chairman selection — this time we will get started a little earlier than five years ago. Bob Bittenbender will be reunion chairman again. He seems interested in doing the job and has several men already lined up to help him. We started informally a little before this past Alumni Day and I believe Bob got in touch with several people before the summer really got started. . . . Besides the reunion chairman I have the honor of appointing an elections chairman. That is, someone who will handle the collection of nominations and the mailing and counting of votes for new class officers. I have not actually approached anyone yet and would appreciate any suggestions. There should be at least three on the nominal committee, so any suggestions would help round out three. (While a considerable time will elapse before *The Review* appears in print I am sure Hap will still welcome any suggestions classmates may have to round out the elections committee, if they will write to him at his home on Valley View Road, Weston 93, Mass.) I suggested to Bob that for working capital for the next reunion he contact you for an advance from the class treasury. We did that last reunion and were fortunate to return more than we borrowed. He will need a deposit for holding the location open. (With the interest payment in July the class account is now slightly over \$1000 and your Secretary has offered to send Bob whatever part of it he needs to insure a successful reunion.) Thanks again for your letter and hope this has not been too long and wandering in thought. Congratulations on the new ad-

dition to the family (Karl Marion Gutttag arrived May 29, 1954). Two boys! Our spread is a six year old boy and three year old girl. Both are enough to drive their daddy to drink."

Just too late to make the July issue I received a letter from Fred Hammesfahr dated May 19: "After having been reading and enjoying your class notes for some time, my conscience has finally troubled me into feeling that it's my turn to volunteer some statistics for the class notes. I feel particularly in a mood for writing as I also have a brand new addition to the family to announce — one Bob (Robert W.) Hammesfahr born yesterday. Mother and baby are doing fine. He makes the second boy in the family, the first being named Ricky (James Frederick) and having beat him into the world by about three years. That's the complete family, except, of course, for Pat whom I met and married in Akron. So much for family statistics. I'm manager of process development for G. E. Chemical Division in Pittsfield, Mass., as you correctly reported a few months back. We've been here two and a half years now and think Pittsfield one of the finer spots to live. Sports all year long — though a cast this past winter (torn knee cartilage) has turned me into a reformed skier — and a fine climate, dry in the winter and cool nights in the summer. I was obviously in Akron, Ohio, at one stage of the game, and it was before coming here. There I was with General Tire and Rubber (five years in production process engineering). Before that, the Navy, which I joined (among other compelling reasons well known to all of us) to see the world and can truthfully report that I did get to see at least a very large chunk of the globe. Before the Navy, it was Du Pont in Wilmington, Del. There are a lot of M.I.T. people here in Pittsfield and with the Chemical Division. However, the only Class '40 chemical engineer whom I know of is Jack Grossman over in Schenectady. Charley Reed, whom I'm sure many of the Course X men will remember is general manager of our Silicone Department. Well, Al, I've just about exhausted the news that seems to me of possible interest to the Class. Tell anyone in the neighborhood, including, of course, yourself, to look me up."

From Phil Stoddard who has just finished his first year as associate placement officer at the Institute comes word that he has enjoyed the work very much. Phil also enclosed a check of \$2.50 for his class dues. Herb Hollomon was one of three General Electric who spent a month this summer touring Europe on a mixture of business and pleasure. Herb gave talks at a conference in Bristol, England, on "Defects in Crystalline Solids" and at another conference in Birmingham, England, on "The Mechanical Effects of Dislocations in Crystals." In addition he attended the "Third International Congress of Crystallography" in Paris, France, as a delegate and went to Amsterdam, Holland, for a meeting of the Board of Governors of Acta Metallurgica of which he is secretary-treasurer. Herb and Mrs. Hollomon also visited university and industrial research laboratories in England, France, and Germany. Recently Herb was acclaimed by *Fortune* Magazine as one of

America's 10 leading young scientists. In addition to his present position with G. E. Herb finds time to be adjunct professor at Rensselaer Polytechnic Institute and to be active in community affairs.

From Frank and June Penn comes a very cute announcement of the arrival of William Lee Penn, II, on March 27, 1954, in Orlando, Fla. Louis Michelson who is technical director of the U. S. Underwater Ordnance Station at Newport, R. I., this July received the Meritorious Civilian Service Award, the Navy's second highest honorary award for civilian service. John Casey has been elected assistant vice-president of maintenance for American Airlines, Inc. Now that the recent pilots' strike has been settled John will really be kept busy as American is the United States' largest airline.

Dino Olivetti is president of the Olivetti Corporation of America. An interesting article appeared in the Boston *Herald* of June 27 on this Corporation and on its associated Ing. C. Olivetti and Co., S. P. A., which has its main plant in Ivrea, Italy, and is one of Europe's leading manufacturers of office machinery. Donald Monell is the architect and land planner of "Cove Hill" and "Blueberry Shores" two new developments of houses in Gloucester, Mass.

Despite the fact that it was an "off" year 16 members of '40 together with the wives of two members attended Alumni Day last June. Those attending were: Richard Berry, Robert Bittenbender, John Danforth, Richard Dunlap, Thomas Gibb, John Gray, John Kapinos, Richard MacPhaul, Robert McKinley, Louis Michelson, John Piotti, Jr., Richard Robertson, Walter and Mrs. Schuchard, Robert Stanley, Phillip Stoddard and Marshall and Mrs. Wight. This is a good indication that our reunion next June will be well attended. Your Secretary is looking forward to renewing old friendships with as many classmates as possible at the reunion. In the meantime don't forget to write to Al of your plans as well as of past activities. — ALVIN GUTTAG, *General Secretary*, Cushman, Darby and Cushman, American Security Building, Washington 5, D. C. MARSHALL D. MCCUEN, *Assistant Secretary*, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

• 1941. •

This summer has been quite profitable in terms of letters from the Class. Rogers Finch has written an account of his travels which bears repeating verbatim:

"On June 1, 1953, I became the director of the U. S. Special Technical and Economic Mission to Burma (Foreign Operations Administration) when my boss left Rangoon. From then until May 13, 1954, I administered the closing out of that Mission. Also, our daughter (finally, after three boys) was born in Rangoon on May 8, 1953. Her name is Kathryn Ann (Burmese name Ma Thin Thin, meaning fragrant) and you can imagine how she is being spoiled by her brothers, let alone her parents. We left Rangoon by SAS plane on May 13, 1954, and arrived in Rome on May 14. We spent four days there and really did the city. It is a fascinating place and we would love to return there some day. We took the train

to Naples and spent another four days there. I took the boys to Pompeii, and Amalfi Drive, and Capri before embarking on the S. S. *Constitution*. We touched at Genoa, Cannes, and Gibraltar, and then via the Azores, arrived in New York after a wonderful crossing. Dad met us in New York and we drove up to his home in Broadalbin, New York. I spent three weeks in Washington telling Stassen's crew how the foreign aid program should be run and returned to Tech after July 4. I helped Stan Backer run a summer industrial symposium, resigned from M.I.T. on July 31 and started in at R.P.I. on August 1.

"I have a non-academic appointment and will be in charge of the new Rensselaer Associates Program, similar to the Industrial Liaison program at M.I.T. The idea is to open up the services which R.P.I. has to offer business and industry, not as a money-raising scheme, but as a public service program. My main job in the near future is to organize the local area fiber industries, paper, textiles, and so on, to support sustaining research through membership in a Fiber Technology Center of which I am the Director. As time goes on, other such centers for other industries will be formed until we have broad industrial participation. This is part of the very dynamic educational development program upon which R.P.I. has embarked in the last several years. We are in the process of moving into our new home in Poestenkill, about 10 miles from R.P.I. It is a converted farmhouse with a four-room cottage, garage-workshop, and garage-barn on 70 acres of land on a hill overlooking the broad sweep of the Hudson and Mohawk Valleys, and with a fine view of the Catskills and Adirondacks. The family is very enthused about the whole thing, and we are finally getting the kind of place for which we have been looking for a long time. I see Bob Demartini quite frequently as they live only a few miles from us in Defreestville. F. L. Huyck Company, where he works, is one of my co-operating companies, so we expect to see each other often both socially and professionally in the future."

Sanford Glick has moved from one side of the country to the other, from Springfield to North Hollywood, Calif. Sandy writes: "As you can see from the letterhead, I am no longer with Monsanto, but am now associated with Knickerbocker Plastic Company, one of the leading toy manufacturers in the country. As for other vital statistics, I have two girls, two and six years old, and naturally a wife goes along with it. If you are ever out this way, we would like to see you. I should think, after the last hurricane you people had, there would be a mass migration from New England to sunny, gay California." Maybe he's got something there! Sandy is, incidentally, general manager of the plant out there. Will Mott has also come up with the following items: "On May 24 I saw Dave Herron, who is with the A.E.C., on leave from Atlantic Research Corporation, and Jim Pickard, who has just left the A.E.C. to start his own business in consulting on atomic energy developments. He is located at 1815 K Street, N.W., Washington

5, D. C. I also encountered Bill Watkins'42 and Sid French'38. I frequently see Ken Tsunoda, who is partner of the American Messer Corporation; Ed Kispert, who lives in Wilton, Conn., and is in Babcock and Wilcox engineering; Bill Bowes and several others. I also used to see John Barker before he went to Saudi Arabia with Arabian-American Oil. A few weeks ago I had lunch with John Murdock and Herb Stein in Philadelphia and talked to them about Perlite Corporation. Bill Folberth lives across the street from the sales manager of one of our divisions in Cleveland, and when I was there recently we arranged for a short-meeting over a "drambuie." He and his wife both look fine, and Bill seems to be doing well in his industrial wire goods business." Thanks very much, Rog, Sandy, and Will; now how about similar such good letters from some of the rest of you?

Promotions include those of Basil Staros and Henry Avery. Basil has been named to the new position of engineering section head for system analysis in the weapon system engineering department of the Sperry Gyroscope Company. He joined the company as a project engineer in January, 1951, and his activities since then have centered about the Sparrow missile. In May, 1952, he was made senior project engineer and aerodynamics group leader for the Sparrow wind tunnel and flight test analyses. He was promoted to research engineer in November, 1953, and to his present position in April, 1954. Hank Avery has been appointed manager of the Coal Chemicals Division of the Pittsburgh Coke and Chemical Company, and he will continue to carry out the duties of manager of the Plasticizer Division, which position he has held since he joined the company in 1951.

1941 men present at Alumni Day were: Johan Anderson, Henry Avery, Lewis Jester, Milton McGuire, Edward Marden, Willard Mott, and Dirk VanDongen. The Alumni office has reported the death of Ruth N. Crawford, VII, on June 2, 1952. No other details were given. — IVOR W. COLLINS, *Secretary*, 28 Sherman Road, Wakefield, Mass.

• 1942 •

Way back last May, before Boston's cool wet summer, before New York's drought, and long before hurricane Carol I received some very interesting mail. Even though some five months will have passed between the date of the letters and the time you read of them I am sure you, too, will enjoy them. Jack Arend writes under a dateline of Sidi Slimane: "I am presently on a two months TDY at this Air Base in French Morocco. At first glance you might think that I consider myself fortunate at being able to visit this part of the world, and to leave my family for but two months isn't too bad. Ordinarily you would be so right except that I was here at the same base last year, and this year I would much preferred to have gone to England or some other place that I have never been to. In February of 1951 I was recalled to active duty as a captain in the Air Force.

Before I was recalled I was very happily engaged in the teaching profession at the University of Colorado teaching

Freshmen the intricacies of algebra and math of finance with a little trig thrown in. The bulk of my time was spent in my own studies (theoretical math) and I had completed my courses for my masters in math (I was in course XV, if you remember) and had about half of my Ph.D. courses behind me, ready to start in on my thesis when Uncle Sam called. I had every intention of returning to Colorado, but shortly after recall, August 21 to be exact, I was married to Bonniejean Schmiegel of Normal, Ill., a graduate of the University of Illinois. We have been very fortunate and have two children; a girl, Patricia (Tinka), and a son, James. They are staying at our home in Lake Charles, La., where I am permanently stationed, while I am on this two months TDY as part of the Strategic Air Command's rotational policy with its combat organizations. I am currently a Senior Observer on a B-47 crew (with rank of major).

Not quite so far away and in the other direction is Bill McGuigan at the Stanford Research Institute in California. In response to a request for up-to-date addresses and information he writes: "Bill Lynch is a senior research engineer here at Stanford Research Institute, presently engaged in the joining of color television and transistors. He lives in Palo Alto. Arthur W. Knudsen is also out this way, although I do not know his home address. I believe he is working at the University of California Radiation Laboratory at Livermore, Calif. Harry Remde is now working for the General Ceramics and Steatite Company, Keasbey, N. J. Carl Trexel is a Research Engineer in our Economics Research Division at the S.R.I. He lives in Palo Alto but has been spending the summer in Israel as a member of the U.S.O.M. Techno-Economic Study Group. As for me, I have the pleasure of using either of two titles as befit the occasion. At the Stanford Research Institute I am either the head of the Equipment Engineering Group and/or the assistant to the director of Engineering Research."

The mails also brought a sprightly birth announcement from Bob and Mickey Kraus telling of the arrival, on May 25, of Donald Ira, Janet's little brother. Congratulations to the Krauses of Jackson Heights, Long Island, from all of us. And just today the letterman brought a note from Charlie Speas reporting about what has happened to him, Betty and their little girls since they left Boston last spring: "My new job is assistant to the engineering manager of Flight Refueling, Inc. I am pleased with all aspects of it. I hope you'll publish an invitation (so be it, Ed.) to all class members to pay a visit when they are in Baltimore — especially if they fly in or out. Our plant is at Friendship Airport, south of the city, and the name pretty well describes what we are doing. And the work is very interesting—it being a new and important type in the defense program." Enclosed with Charlie's letter was a newspaper clipping showing a picture of Charles H. Smith, Jr. The caption notes that Chuck was chairman of the metropolitan division of the Y.M.C.A. Building Fund drive in Cleveland.

By way of the Sperry Engineering Review of the Sperry Gyroscope Company

we have heard of the technical activities of two of our classmates: Arthur A. Hauser, Jr., published "Geometric Aspects of Least-Squares Smoothing" in the *Proceedings of the I.R.E.* in April; and Walter R. Tower presented a paper at the I.R.E. National Convention in March entitled "The Role of Stereo in '3-D' Radar Indicating Systems." Walt also published an article on the same subject in the May 17 *Aviation Week*.

Charles F. B. Wilding-White has received an appointment as assistant professor of management engineering at Rensselaer Polytechnic Institute. He has been teaching there since 1948. A release from the Union Carbide and Carbon Company reads: "Dr. Howard R. Spindelov, Jr., has been appointed assistant director of research in New York of the Metals Research Laboratories, Electro-Metallurgical Company. (This is a division of U.C.C.) Dr. Spindelov has been with the Metals Research Laboratories since 1942, following his completion of graduate work and receiving the degree of D.Sc. in Metallurgical Engineering from M.I.T. He had been manager of the Metals Research Group at the Niagara Falls laboratories since May 1953. Dr. Spindelov has been largely responsible for the fundamental research problems concerned with the production of Simplex low-carbon ferrochrome. He has supervised research on new Haynes Stellite cobalt- and nickel-base alloys since 1950." The Alumni Register tells us that Howard has moved his residence at the same time to Chappaqua, New York.

And I.B.M. has brought us up-to-date on Ralph G. Mork. He has recently been appointed a development engineer in their Development Engineering Organization and has been with IBM in various engineering capacities since March 1949. During World War II he served as a Navy lieutenant with the Special Devices Division of the Office of Naval Research. He is a licensed amateur radio operator, maintains a station in his home, and is a member of the Study Club and of the Sports Car Club of America.

By way of statistics, a report from Chick Kane, Director of Tech's Alumni Fund, shows that 197 of us contributed an average of \$16.30 each for a total of \$3204.50. While this is, if my memory serves me correctly, much higher than our previous figures, and higher than that of the classes just before or after us, it is interesting to note that we did it with a smaller percentage of the Class and fewer people than almost any class older than '44. The Alumni Office lists 1117 members in our Class.

Way back last June, 13 of us gathered around one table at the Statler to recall old good times, drink lots of beer and trade notes on present activities, physical changes, families, and politics. The role of familiar faces was Jerry Coe, Al Goldis, Stan Golembe, Paul Hotte, Harvey Kram, Marty Levene, Milt Platt, Bill Rote, John Schmidt, George Schwartz, Carl Zeitz and your Secretary. A quick tabulation showed two in research, five in engineering, two in production, two in sales, one in medicine, and one in the movies.

A short while ago the new forms went out for data for the Alumni Register—the

new edition that is due off the presses early next year. The Office writes, however, that they do not have usable addresses for the following people: If anyone knows the present whereabouts of any please drop a postcard to the Alumni Office or to me: Fletcher Brown, William Budge, George R. Clark, Mary Conroy, Lt. Ubaltino C. R. de Asevedo, Walter Gabel, Liang-Chang Ho, Sheldon Kennedy, Giulio Monleone, William Moore, Elwyn Moseley, James Sadler, Harold Searby, A. H. Shieh, Bernard Suprenant, Gilbert Tompson, and Zeit T. Wang.

Long distance move for this issue was by James E. Stinson from West Somerville, Mass. to Whittier, Calif. Other changes of address are Hugh M. Curran to Uxbridge, Mass.; William H. Haggard, II, to Norfolk, Va.; William F. Hecker to Clayton, Mo.; Dr. Ernest M. Kenyon, Jr., to the Quartermaster Research and Development Center, Natick, Mass.; Robert E. Krucklin to New York City; Eliot W. Reynolds to Birmingham, Mich.; William B. Seaton to Washington, D. C.; Dr. Yen Shen to the Department of Economic Affairs, Taipei, Taiwan; and Dr. Edward F. Thode to St. Paul, Minn. — Lou ROSENBLUM, Secretary, Photon, Inc., 58 Charles Street, Cambridge 41, Mass.

• 1943 •

During the summer I received a few letters which I shall pass along to you later in these notes. I would like to have received more letters as per my request of last July, but to that end I have plans which you will soon hear about.

In attendance at the June reunion were the following: Nathan H. Acker, Gustavo Calleja, James F. Hoey, Jr., Hugh Parker, Stanley C. Paterson, Andrew Plonsky, Raymond R. Richards and Morris H. Rosenthal. Unable to attend, however and for good reason, was our classmate in Turkey, Dr. Recep A. Safoglu, who wrote as follows to Class President Hoey: "Although I do not and cannot, answer your invitations and appeals favorably, I do read them with great interest. It is so difficult, and even impossible at times, to send money from foreign countries so I do not receive The Review. If it is any news, 'till the end of 1953 I was at the Project Department of ETIBANK in Ankara. Beginning with 1954 I am smelter superintendent at the Murgul Copper Mine, which is one of ETIBANK's establishments. Our plant is producing 9,000 metric tons of blister copper per year and for the moment we are at work to add an acid plant to our smelter to recover sulphurous gases. Would you kindly have my address changed as follows: Dr. Recep A. Safoglu, Smelter Superintendent, Murgul, Turkey. Thanking you for the well-written and humorous letters you send out from time to time."

S. Richard Childerhose has been appointed works manager of Ruge-deForest, Inc., Cambridge, Mass., an affiliate of Baldwin-Lima-Hamilton Corporation, Philadelphia. Dr. Arthur C. Ruge, President and general manager, Ruge-deForest, Inc., said the appointment expands the executive group of the company and permits more effective use of their abilities and energies. Mr. Childerhose was formerly manager of production of analog

computers for ship-borne gun fire control and air-borne bombing systems at Norden Laboratories Company, Milford, Conn., and spent nine years with United Aircraft Corporation, East Hartford, Conn., on wind tunnel operations. Among Ruge-de-Forest's products are SR-4 load- and pressure-sensitive devices and instrumentation based on Baldwin SR-4 bonded resistance wire strain gauges. The company is also known for its RdF Stikon resistance thermometer elements. Dick's new address is 8 Diana Lane, Lexington, Mass.

The appointment of Henry M. Tiedemann as assistant to the vice-president in charge of operations for the Grace Line was announced by C. C. Mallory, President. Mr. Tiedemann comes to the Line from the Society of Naval Architects and Marine Engineers, with which he has been associated as a technical assistant charged with coordinating the organization's research program. He took his master of science degree at the University of Michigan's Horace Rackham Graduate School. Prior to his employment by the society he had held engineering positions with the Direct Reproduction Corporation, in connection with plant management and production control, and the Bethlehem Steel Company, in the field of design and cost estimating.

On July 3, 1954 Burton Angell was married to Jean Nutt Oswald in the First Methodist Church at Falmouth, Mass. Burton served as a captain in the Army Engineers and now is employed in Schenectady as a mechanical engineer with the General Electric Company. Also in July, Warren E. Foster became engaged to Lista Weir Lincoln. Miss Lincoln, an alumna of Stoneleigh-Prospect Hill School and Bradford Junior College, is a member of the Junior League of Bridgeport and conducts the Children's School of Fairfield. Warren served as a lieutenant in the U. S. Navy and is now assistant to the president of the Cornwall and Patterson Company.

On June 20, 1954 Jim and Jane Hoey became the proud parents of a daughter, Mary Jane. The Hoeyes recently moved to 156 Gerry Road, Chestnut Hill, Mass. On August 6, 1954, a son, Duncan Scott, was born to Elaine and Bob Mitchell.

I received the following letter in August from Bob Rorschach. "Yesterday I celebrated my 32nd birthday by attending the wedding of a cousin who was a child in grammar school when I graduated from Tech. I mentally reached for my cane and marvelled at how time goes by. For most of us the classmates and fraternity brothers of those days are now only memories, but at least we can send a little news occasionally to keep the memories alive. And so I take my typewriter in hand to bring my personal story up to date. As I recall, the last time I corresponded with the class Secretary was over two years ago. Since then there have been some changes. Last September we added the fourth child, Barbara Anne, to the family, making our score now a boy and three girls. The following March I left American Smelting and Refining Company and moved from Salt Lake City with the whole gang to Pryor, Okla., where I am now a chemical engineer with the Grand River Chemical Division of Deere

and Company. That fine old farm implement company has moved into the fertilizer business, and this month we are starting up a \$20 million ammonia-urea plant to supply John Deere Vitrea to the farmer who insists on the best in nitrogen fertilizer.

Before leaving Salt Lake City we saw two others from the Class of '43. Chris Matthew called on us while he was passing through on his way to California. I believe he is now head of the Arthur D. Little office in San Francisco. We also saw quite a lot of Jim and Sue Malloch. They moved to Salt Lake City about a year ago with their two children. Jim is Maintenance Superintendent for Western Phosphates, Inc. We like Pryor very much. It is a small town which is close, but not too close, to Tulsa. We have relatives all over this part of the state, so we are really coming home after being away for years. We have even been able to withstand an exceptionally hot and dry Oklahoma summer. We have not given up hope of eventually getting back to Cambridge for a reunion, but we don't know when it will be. We have not yet located anyone willing to take on our four Indians for a long enough time."

In August of this year the Institute established the Irving Shakhov Memorial Scholarship Fund. The income from this fund will be granted as scholarships to undergraduates in the Department of Physics starting in 1956. Irving's death was mentioned in these notes last Spring. A Medal of Freedom was conferred upon him in Washington posthumously for his valiant endeavors while serving with the U. S. Navy's Operations Evaluations Group in Korea in 1952. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

• 2-44 and 10-44 •

Your Secretary apologizes for submitting such short notes. Up here in New England we were visited by two girls, Carol and Edna, and they made me a Displaced Person about the time the Class Notes were due. Next issue I faithfully promise to have a full report of the highly successful 10th reunion of the Class at Lenox, Mass., in June. — BURTON BROMFIELD, *Secretary*, 72 Woodchester Drive, Weston 93, Mass.

• 1945 •

Hurricane Edna is now rolling by Montauk Point as we hasten to meet the September 13 deadline for Class Notes. Our theme for the next eight months will be our tenth reunion. Five plus five for Forty-five. Before discussing the progress and plans of your reunion committee, let us examine the items received during the summer sojourn.

The entire Class extends sympathy to the family of William H. Martin, Bill, who, as you will recall, accepted chairmanship of our reunion committee last spring, passed on in early July. Bill will always be remembered by all of us ex-V-12'ers as an old Navy Chief Radio Technician who knew the Navy ropes yet could not fathom the freakish inhuman ways of Canfield *et al* during our hectic college days. After Tech Bill taught briefly at Pratt Institute in Brooklyn be-

fore actively entering the budding electronic industry in greater Boston in 1948 or 1949.

On May 8 Alice Ford Daley, a graduate of Trinity College, became the bride of Thomas Stephen Markey. After a wedding trip through the South the couple are making their home in Westfield, N. J. near Rahway, where Tom is associated with Merck and Company. Tom, a member of Beta Theta Pi, is a Course XV stalwart. The last weekend of June marked the marriage of Joan Cargill of Wakefield, Mass., and Hedley V. Patterson, III. For the past year Hedley has been president of the Medford, Mass., Historical Society and is actively employed by Garlock Packing Company, Boston, as an engineering salesman. Ross Compton's thoughts have turned to matrimony! At a tea on June 27, the engagement of Joan Sterlin Mathews of South Portland, Me., to Ross Harrington Compton was announced at the Comptons' home in Seneca Farms, Va.

In mid-July Heubner Publications, Inc., announced the appointment of Dick Jorgenson as New England representative for Tooling and Production. In the late 40's Dick represented Merrill and Usher Company of Worcester as a steel salesman; more recently Dick has represented one of the many McGraw-Hill publications in the Cleveland area. Last spring, as before, Bob Symonette of Nassau crewed in the Newport-Bermuda race; this year Bob was on the 57 ft. 6 inch yawl, *Caribee*. James D. Felter of West Springfield, Mass., recently left for Saudi Arabia where he will be employed as an engineer with the Arabian-American Oil Company. After leaving the Institute, Jim served in Japan with the Navy before joining Colorado Fuel and Iron as a sales engineer in Massachusetts. More recently Jim was back in the Navy serving two years in Italy where he was a communications officer attached to N.A.T.O. Headquarters at Naples. In mid-June John H. J. McMullen was appointed chief of the Maritime Commissions office of Ship Construction and Repair. Jim received his bachelor's degree from the Naval Academy in 1940, his master's in course XIII at Tech in '45, and a doctor of technical science degree from the Swiss Federal Institute of Technology in Zurich in 1950. Recently Bill has been vice-president and chief engineer at the Hudson Engineering Corporation in Hoboken, N. J.

Last spring Henry A. Lurie announced the opening of his consulting engineering office in Cincinnati, Ohio. Richard L. Canaday, course XIII, received the LL.B. degree from the School of Law at St. John's University in Brooklyn at its 83rd commencement last June. The J. J. Strnads announce the birth of a second child, Lyse Stuart, on July 21. May we again thank J. J. for a very cute birth announcement. Jerry Lott has returned to the States (New Jersey) from San Juan, Puerto Rico, Jerry is still with Pharmaceutical Products Company. Bill Loeb recently moved from Hartsdale up to Chappaqua, N. Y. to be nearer his place of business. Bill and Allan Greuber '46 are associated in Nuclear Development Associates, Inc. with headquarters at the Westchester County Airport. Fran and I welcomed the opportu-

nity to entertain Tom Stephenson one evening last June. Tom is much the same as you remember him as far as his bubbling personality is concerned but I daresay you might not recognize him with his recently acquired 50 pounds or so!

Those attending Alumni Day last June were as follows; Jim Brayton, Fran Carroll, Dave Flood, Tom Hewson, Charles Hart, Walt Kovaleski, Don and Mrs. Kuehl, Tom McNamara, Bob Maglathlin, Bill Meade, Warren Miller, Ep Radner, Bob Remorenko, Bill Schuman, Dick Winkler, Don and Mrs. Whitehead, Ed and Mrs. Ferrantino, Prexy Chick Street, Guy Gilliland and yours truly.

Your 10th reunion committee which is now in full production is made up as follows: Tom Hewson and Dave Trageser, Co-chairmen; Dave Flood, Bill Shuman, Jerry MacKinnon, and Jim Brayton with Chick Street and myself as ex-officio members. All members with the exception of Chick and myself reside in greater Boston where it is felt the control should be. The reunion committee with able advice from numerous class members has made reservations for the Hotel Curtis, Lenox, Mass., for the week-end of June 10-12, 1955. Remember that date! The 2-44 and 10-44 Class had one whale of a time at the Hotel Curtis in Lenox last June. Dave Trageser was in attendance as a guest of last year's reunioning classes and is thoroughly sold on the selection. We know you will be too when you join the Caravan next June! — CLINTON H. SPRINGER, *Secretary*, Fireman's Mutual Insurance Company, 420 Lexington Avenue, New York 17, N. Y.

• 1948 •

After a pleasantly long and lazy summer, it is time to take another look at what our fellows have been doing since we last got together on these pages. All of the letters cited in the first person are from responses to Corporal Ken Brock's appeal for Alumni Fund support. He very kindly passed them along to the rest of us.

In the marriage department we have one announcement, that of the wedding of Ben Brettler to Jean MacLeod of Boston, and to them our congratulations. In the birth department, it is a pleasure to introduce Joellen Louise Silverman born to Jo and Bob Silverman on June 7. Fellow Chicagoans, the Silvermans live at 2308 Grandville Avenue.

In the academic world, Joe Corso has been elected an associate of the Cornell chapter of Sigma Xi, national honorary for the encouragement of original investigation in science. Joe recently completed graduate work at Cornell University receiving a masters degree in Aeronautical Engineering. William Harris, has joined the staff of the Battelle Institute in Columbus, Ohio, as a consulting scientist. He will serve in a liaison capacity between the Institute and its sponsors in government and industry. Paul Kellogg has been awarded a Fulbright grant for study in Denmark and will study at the University of Copenhagen's Institute of Theoretical Physics. Jesse has been a graduate student and research assistant in the Cornell University physics department.

From the News Service we have re-

ceived a list of those men who attended Alumni Day in June. The list is as follows: S. Martin Billett, Albert F. Carr, John J. Clifford, Robert C., Jr., and Mrs. Dean, John Dugundji, Henry S. Gilbert, Richard H. Harris, Philip B. Herman, John R. and Mrs. Jones, William J. Joyce, Leon A. La Freniere, Walter Mindermann, John R. Mitchell, Sumner Myers, Richard Souza, Walter K. Vivrett, Arthur Waxman, Richard S. White, Albert J. Davidson.

Bob Mott writes from Hebron Academy in Hebron, Me., "I left Andover last June and started here in September . . . much smaller school which has its advantages. Next year I take over, of all things, the dining hall. This will be in addition to my teaching and dormitory duties, of course. The dining hall duty is not unlike the head captain's job at Walker."

From the military two bits of news: Captain Fiorenzo Losco is now at the Ordnance Guided Missile School at Redstone Arsenal near Huntsville, Alabama. The captain came to Redstone from Aberdeen Proving Ground, Md., where he studied the advanced officer's course for ordnance officers. The Ordnance Guided Missile School is designed to train personnel in the special problems of storage and up-keep that guided missiles need in order to stay in prime condition when they are delivered to the men on the firing lines. First lieutenant Ployer P. Hill, stationed at Wright-Patterson Air Force Base, Ohio, has been promoted to the rank of Captain. He is serving as a project officer in airborne electronic equipment at Headquarters Air Material Command, which is the world-wide procurement supply and maintenance source for the entire air force.

Three further letters relating to their vocational activities were received by Ken and are quoted. From Mark Mirchner we learn: "At present, I am in the preliminary design aerodynamics unit at Boeing. Brother Otto is working on systems analysis also here at Boeing. In many spare time I am helping on the Institute of Aeronautical Sciences committee for a national meeting in Seattle this summer at which Boeing will present their jet transport. Also just got appointed chairman of the I.A.S. membership committee and am trying to whip that into shape. On week ends I teach local Seattle air cadets how to fly gliders. This is the first flying air scout group in the country. On my days off from air scout instruction, I seem to be expected to tow other members of the Seattle Glider Council from my airplane since I have the only ship in the area equipped to tow gliders. Incidentally Otto is not doing badly. He is at present mayor of his little community of Yarow Point.

Ezra Garforth writes, "I am presently with the Philadelphia Steel and Wire Corporation in the Sales Department. Before coming here on the first of January, 1954, I was with the Minnesota Mining and Manufacturing Company for two and one-half years, Ford Motor Company two years, and the Atlantic Refining Company a year and one-half. After working for three large companies, a small one is the only place for me. I am married to a Sargent girl and have two boys, ages three years and another three months."

From Malcolm Redd word was received as follows: "Last August I made a change from Tracerlab, Inc., in Boston, where I had worked for three years to Sikorsky Aircraft in Bridgeport, Conn. Bridgeport has a fairly large number of M.I.T. grads, especially at Sikorsky where I am now doing engineering and design work on test facilities for helicopter components. I have been working on jigs and stands for testing main motor shafts, landing gear, tail rotors, and other parts of this ship. I get a great kick out of seeing ideas on paper become huge steel structures. Most of the people are very pleasant to work with and I am learning a great deal about real mechanical engineering. Most of all, I am enjoying this new married life. On January 30, 1954, I married Barbara Warren from Montpelier, Vt., who had just then graduated from Simmons College as a physical therapist. She is now working at the Crippled Children's Work Shop in Bridgeport. Both of us enjoy living out of the city where the cows speak to us more often than people. At this time of the year especially, it is a great satisfaction to be able to enjoy the fresh colors of the countryside."

Closer to home, your Secretary has seen John Weil twice this summer during his trips to Chicago for the General Electric Company. John is working in Schenectady helping to develop commercial applications for atomic power. Jules Levin, he tells us, has returned to Brookhaven where he, too, is active in nuclear research and development. Your Secretary is moving from Chicago. After six years of constant traveling as a consultant, he has decided to settle down and see how it is to manage a business rather than to tell others how to do so. They say there is quite a difference, and soon I'll know. If any of you live in or around Dayton, I should enjoy getting in touch with you and renewing old acquaintances. My home address is as yet unknown, but I may be reached after October 1 at the Moraine Paper Company, West Carrollton, Ohio. More news next month — if — you write. — WILLIAM R. ZIMMERMAN, *Secretary*, Moraine Paper Company, West Carrollton, Ohio. RICHARD H. HARRIS, *Assistant Secretary*, 26 South Street, Grafton, Mass.

• 1950 •

Did you all have an enjoyable summer? Soak up enough sunshine? Play enough golf? Catch that mountain trout up in the hills? Now I want you all to diligently work hard this winter and look ahead to next summer. Take a look at the calendar, my good classmate, and add up the years that you will be "out" come next June. The Class of '50 will be five years old and in order to facilitate the appropriate celebration of this event, a reunion committee has been organized here in the Boston area. Pete Baker, Jay Bedrick, Mike Fitzmorris, Ralph Gretter, Carroll Johnson, Charles Levy, Bob Mann, Dan McGuinness, Don Miller, Bill Murphy, Nat Roossin, Gabe Stilian, Don Walker, and myself, comprise the reunion committee with Don Miller our efficient chairman. Plans are far from complete, and you will be hearing directly from the committee in the near future, but let me now give you the date of the reunion so that you can plan to

take your vacation, or plan a "business" trip at that time. The weekend of June 11 and 12, 1955, will be a week end you will never forget if you come join the rest of your classmates at the '50 reunion. We intend to have a ball of a time and we don't want you to miss out on any of the fun.

Ten of the boys were present at the festivities of Alumni Day last June. They included, Jay Bedrick, Bob Mann, Bill Maroni (and his Mrs.) Andy Price, Ed Reidy, Gabe Stilian, Guy Weil, Fred Von Muller, Ed Dmytryk, and yours truly. Andy Price is the manager of Industrial Relations, and Chief Industrial Engineer for Sylvania, at their Puerto Rico Plant. Andy, his wife and three young ones were up to New Jersey on their vacation, when Andy decided it was a good time to visit the old place again. Ed Reidy is working here in town with Cleverdon Varney and Pike, structural engineers. Ed now has two little boys to keep him busy on weekends and in the evenings. Guy Weil was here in the states from France on a business trip, and managed to route himself through Cambridge on June 14 and thereby was able to attend Alumni Day. Needless to say a good time was had by all.

Now for some real old news that I didn't compile in time for the July issue.

The Weavers donned their best "Dress me up" clothes the night of April 23 and made their way back to the campus for the annual Assembly Ball, at Walker Memorial. The current student staff at Walker put on a very impressive show for the old timers who managed to make it back. Fiftyites seen in the audience included Jack Cord, Phil Byrne, Jim Staikos, Barret Whitman, and Sterling Brisbin. Jack Cord has his hands full with design work at Chance Vought here in Boston during the daytime and six hands full at night with his little two year old son, Mike. Phil Byrne is still working in Waterbury, Conn., with U.S. Time Company and he reports that Charley and Cindy Lusher (also from Waterbury) were expecting their first born about the first of May. The Army is also eyeing Charley for an early induction. The Army finally caught up with Jim Staikos but he managed to get the weekend off and he came up from New York to attend the Ball. Bris and his newly acquired wife, Joan, came up from Stamford, Conn., where Bris is working for the Dorr Company, a sanitary engineering consulting firm.

A few weekends later, May 15, to be exact, Joseph D'Annunzio and Viola Di-Fronzo, of East Boston, were married at St. Lazarus Church, East Boston. Bob Whitney, Al Petrofsky and yours truly attended the wedding and reception that followed. Joe is working for the Brewster Construction Company in New Jersey and he is currently working on the new Garden State Highway. Bob Whitney put a hitch in the Ordnance Corps in Korea and since his discharge last year has been with Du Pont. He had an assignment with a power plant in Florida for a while, but he's back in Wilmington again for a little stay. Al also served a tour in Korea and was discharged last June. He rejoined Morrison-Knutson, the firm he was with before he entered the Army. He worked

out of their New York office for a while, and then when Morrison-Knutson obtained a large water tunnel project here in Boston, Al was assigned as project engineer. They started digging the shafts for the tunnel in March and work on the Tunnel Proper commenced in the middle of June. When completed (three years from now) the tunnel will run from Brighton to Malden and consist of a tunnel 10 feet in diameter, about 400 feet below the surface of the ground. Al will really have his hands full for a while anyway.

Harold Moss dropped us a line to tell us of his two wonderful years with Headquarters, Air Research and Development Command at Baltimore, Maryland. He gained excellent experience as assistant for transport aircraft with the directorate for logistics and training systems at the Headquarters. Since his discharge in February, 1954 he has been working in the Preliminary Design Group at the Grumman Aircraft Engineering Corporation in Bethpage Long Island. Frank Coy served as a 2nd Lieutenant in the Air Force and now has a teaching fellowship at the University of Rhode Island while he is working for his masters degree in mechanical engineering. Charles Renn still out on the West Coast, but he moved to Santa Ana, Calif., where he is working at the Marine Corps Air Station. Via the Alumni Register I see that Jules Van Deun is a 2nd John and stationed out in Michigan. Lt. Ray Moeller has an APO San Francisco for an address and is presumably in Korea or Japan. Al Dell'Isola has been stationed in Korea for about a year now.

A couple of years back I wrote a piece in The Review about the harpsichord which Howard Graves built in his spare time. I now find that Howard played his home made harpsichord before a nation wide T.V. audience. It's now Private Graves and he is stationed at Camp Pickett, Va. Allyn Eade, of Somerville, and Alethea Little announced their engagement in April and plan a June Wedding. William Patrick McDonald and Ruth Alice Mark were married at the Church of Christ Congregational in Milford, Mass., on the third of April. Bill is working at Tech and he and Ruth set up their nameplate in Concord, Mass.

Rich Rorschach, my trusty correspondent from the Southwest came through with a newsy letter about doings down that-away.

"In the beginning of May I wandered up Yankeeland to help an old friend, Curt Snow, get hitched to a sharp little lass from Long Island. Also in the wedding party was Johnny Alfano who is working in that neck of the woods with a construction outfit. With Johnny was a very pretty young lady whom he introduced as his wife. It seems that he has been married now for a couple of years plus or minus. Curt has finally wised up and I think he is considering coming out here and joining up with the other Okies. Chuck Nolan is still working with Nolan Brothers Construction Company, and the last I heard from him he was at Fort Worth, Texas. Thor Stromsted is still up in Chicago and he now has two or three children. Bob Magill who was with the Class of 50 before he had to drop out due to sickness at home,

is here in Tulsa working for Braden Steel Company and doing pretty well. He is married and has a little boy. Jack Corrie got married a couple of months ago, and now is working in the Dominican Republic.

"As for myself, I am just plodding along trying to get my hands and feet covered with that black sticky oil which comes out of the ground around here. After 13 months in the Land of the Morning Calm, sometimes called "Frozen Chosen," I got back to the States and took a couple of months getting rehabilitated. It was great. But then my finances got a little low so I started toiling for my daily bread. A couple of other people and I started a little consulting outfit and while waiting for our first job I am working with my Dad trying to hustle an honest buck in the oil business."

Thank you Mr. Rorschach. Rich enclosed a brochure with his letter describing the objectives of his new company, the Oklahoma Engineering Specialties. He offers consulting services in the fields of water treatment, sewage disposal plant operation and management, analysis of water and sewage systems, composting of municipal wastes, and air pollution abatement.

Now back to the matrimonial front. At 9:00 A.M. on the morning of April 24, 1954, during a Nuptial Mass in Sacred Heart Church in Springfield, Mass., Mary Theresa Mahoney became the bride of H. Robert Erard. Mr. and Mrs. Erard went on a motor trip to Washington and through the south to Miami, Fla., for their honeymoon, and then returned to Springfield where they set up housekeeping. He is a physical metallist in the research and development branch of the Springfield Armory. Suzan Horowitz and Malcolm Green were wed at a simple ceremony at the bride's home in New London, on June 20, 1954. After a wedding trip to Canada the happy couple returned to Arlington, Mass. Mal is now associated with the engineering firm of Rue de Forest, Inc. of Cambridge. The Whitneyville Congregational Church, Hamden, Conn., was the scene of the wedding on April 24, 1954, of Betty June Nelson to Raymond Gordon Hawes. Now across the ocean to the picturesque city of Venice, Italy, where Stanley Hillyer took Laura Venini for his bride at the beautiful Chapel della Scuola Grande dei Carmini, on June 21. Stan has been working in France as an industrial consultant. He and Laura are planning to visit Boston this fall and spend a month at Curtis Point the home of Stanley's parents. Arlene Greenberg became the bride of Leonard Lann at a double ring ceremony in April, in New London, Conn. Len and Arlene had a two week honeymoon in Bermuda and then returned to Irvington, N. J., where they are now living. Len has been with Worthington Pump Corporation, in Harrison, N. J., since graduation. Norfolk, Conn., was the scene of the wedding on June 26, of Janet Stocks to William Moore. After a reception at the home of the bride the couple left for a wedding trip to Bermuda. Upon their return they settled down in Charleston. Also on the Bermuda bandwagon were Helen Havens and Robert O'Connor who became Mr. and Mrs. on

June 19, 1954, in West Hartford, Conn. Upon their return from Bermuda Bob resumed his activities as engineer at the Veeder-Root Company. Lieutenant Don Starner and Lieutenant Mary Kalaskey were wed on June 9, at the Submarine Base Chapel in Pearl Harbor. Don entered the Navy in '52, and is at present stationed on Kwajalein off the Hawaiian Islands. Mary, after graduation from Danbury State Teachers College taught school for awhile before enlisting in the Waves. I wonder who has date of rank over the other, and who is really boss when they are in uniform? Other weddings in the news include that of Roberta Kueth to Sumner Hale Torrey in April, that of Constance Cone to Mathew Wallace in June, and that of Jeanne Gloria Wells to William Winder in July.

Dr. Thomas Hahn, who received his Ph.D. at Tech in '50 has been appointed head of the Virginia Polytechnic Institute Physics Department. Robert Emerson, resident planner at Madison, N. J., has accepted the position of planning director for Manchester, N. H. Louis Stark received his masters in '52 and is now a member of the Technical Staff of the Radar Division, Hughes Research and Development, in Culver City, Calif.

And just a word or two about the Weaver family before this issue goes to press. I'm still busy building schools for the Park Construction Company here in the Boston area. I'm putting the finishing touches on the Junior High School in Marblehead, and right now I'm in foundation work for a new high school in Holbrook, Mass. And back home the Weaver's had another increase in the size of their family. Little Catherine Germaine arrived on the scene on June 5, 1954, and since that time has been a little dear. Eat and sleep. That's the way I like them. That closes up this session. Remember to keep the weekend of June 11-12 open. You can't afford not to attend the big '50 reunion. — JOHN T. WEAVER, *Secretary*, 68 Revere Street, Boston, Mass.

• 1952 •

It with the deepest regret that I pass on to you the news of the deaths of Bob Arbuckle and Claude Hill. Bob, whose bright, cheerful face you probably remember, was a Course XV graduate working for the Boeing Aircraft Corporation in Seattle, Wash. He passed away in that city on July 12, 1954. Claude received his master's degree in Course XII with our Class, his death occurred on November 25, 1953 in Racine, Wis. Our deepest sympathy is extended to the families of these two men; their absence will be sorely missed by many.

Two new boys were recently added to the Class of 1952 Junior Section: Jim and Joan Stockard celebrated the month of July with a Christopher. Chris looks like his father even to the few hairs on top. Dan and Louise Sullivan graced the Maryland hinterlands with an eight pound eleven and one-half ounce Daniel the Third. It's the right way to start a dynasty. Many happy returns of the day.

The past six months have seen many entrapments or blissful unions, depending on your viewpoint, for the 52-ers. Starting back on April 24, we found Mary

Jane Verdon, Ridgewood, N. J., a graduate of the Katharine Gibbs School, and Jim Lee exchanging "I do's" in Hartford, Conn. No information given on what Jim is doing nowadays, but Bob Danforth's name does appear in the story as an usher. It appears as if Bob was a lieutenant stationed at Fort Monmouth at that time.

May saw the marriage of Mary Ellen Nestor, a Boston University graduate, and Lowell Smith in Swampscott, Mass. Not much doubt about Lowell's present occupation; he's a lieutenant at Fort Devens. Best man for the occasion was Frank Carta; Jim Sullivan was one of the ushers. Lura Jane Noss, of Andover, Mass. and Oberlin College, was married to Bruce Bidwell on May 22 in Andover. Bruce is presently stationed at Bayonne, N. J. as a lieutenant (jg). No 52-ers were named as ushers. On June 5, Renee Suzanne Gilbert, a graduate of Wheaton College, and Eitel Rizzoni were wed in her home town of Attleboro, Mass. The Rizzonis will make their home in Rome, Italy, where Eitel is employed with R.C.A. as an electronics engineer.

A university of Connecticut romance ended with the marriage of Marcia Ellen Splaver, of Derby, Conn., and Ralph Preiss on June 27 in Bridgeport, Conn. Ralph has just received his master's degree in electrical engineering from the University of Connecticut and is now working with IBM in Poughkeepsie, New York. Arlene Eldridge, of Brockton, Mass., and George Shields were married on July 3 in Scituate, Mass. George is presently employed by the Procter and Gamble Company in Quincy, Mass. Worcester was invaded by the AEP's on July 11 for the wedding of Connie Biller, of that fair city and Radcliffe College, to Dave Weiss. Mike Goldman was best man; Arnie A. Kramer, Larry Golden, and Paul Lux served as ushers. Mike is presently a lieutenant stationed at Springfield Armory doing industrial mobilization planning work; Arnie is just wandering around getting used to civilian clothing again; Larry presently sporting gold bars on a blue uniform (Air Force), and Paul Lux serving as a civilian in Kansas City, Mo. having decided he didn't like the Air Force uniform as well as his civvies. Eunice Foster, a New England Deaconess Hospital nurse from Taunton, was married to Bill Wyson on June 12 in Taunton. The Wysons are now living in Boston. August 21 saw Betty Higgins, a Providence gal who graduated from the Nursery Training School in Boston and Tufts College, and Paul Ries tied together in Providence. Paul is another brand-new civilian; it looks as if he won't be seeing much of his separation pay.

Applications for the Bachelors Unanimous will be accepted until December 1. Charter members at last count were Bob Briber, Bob Walsh, Stan Sydney, Mike Goldman, and yours truly. We supply all members with the latest counter-measures to even the most advanced amorous gambits. Constant research activity is encouraged. Don't be a plonk, join up.

Yours truly has been a civilian since May 1 and has been working for Associated Engineers, Inc., an engineering services outfit in Agawam, Mass., just outside Springfield, as their government con-

tracts coordinator and assistant to the sales Vice-president. However, I have just adopted a semi-retired position as a student at the address noted below. Any time any of you are in Boston, please drop by. I hope to be around for about two years at this address. Write, you bums. — STANLEY I. BUCHIN, *Secretary*, Gallatin D-26, Harvard Business School, Soldiers Field, Boston 63, Mass.

• 1953 •

I have received some fairly extensive reports from classmates of ours who are in the Army and Air Force and also from a lone civilian, Gene Romer. Gene has completed another year of graduate work which will give him a master of science degree in June, 1955. He wrote the letter during his week of vacation in the first part of June, and did a beautiful job of bringing me up to date on a dozen or more classmates. I smiled at the rather casual manner that he ended his four-page letter. He says "only other news is that I met a 5' 6" blue-eyed brunette by the name of Marianne McKenney who will be a transfer student at Northeastern in the fall — Wedding Bells, 11 June 1955."

Covering some of the information that Gene mentioned between his salutation and closing sentence: Howie Hill and Bob Hinds were working toward graduate degrees in Course X, while Fred Zwerling spent much of his time commuting between home and the Sloan Building. Jack Friedenthal, Sid Gravitz, George Dausman, and Bob Piper received M.S. degrees in aeronautical engineering. Friends of Bob will be pleased to hear of his fellowship at Canfield, England. Allow me to save some of Gene's letter for the next issue, and go into the doings of Stan Brink in Galena, Alaska. Stan entered the Army last February and took his eight weeks of basic training at Fort Ord, Calif. He was then assigned to the 30th Engineer Group at Fort Winfield Scott in San Francisco. Stan's present home is the 549th Survey Base Company, one of four such companies in Alaska. Stan's efforts seem to be concerned with the mapping of a flat and swampy bushland which surrounds his company's base of operation. The surveying is done with the use of helicopters and single engine fixed wing planes. In addition to the actual ground surveying, aerial photographs are used to give a more detailed map of the area in question.

Fred Brecher came through with a letter during the latter part of May. Fred has put in better than 10 months at Wright-Patterson Air Force Base, and seems fairly pleased with Air Force life. He mentions the full recreation program at Wright-Patterson for both service and civilian personnel. In fact, he is utilizing his spare time coaching a couple of soft ball teams (in small print he tells me that the team consists of 12 girls). Fred's official title is Installations Engineer; he is putting his building engineering background to good use doing design and estimating work for various renovation projects on the base. Fred also passed on the news that Joe Woolsey, George Wood, Bob Gross and Karle Epple have recently reported into Wright-Patterson.

Along the same vein as far as the gaining of experience is concerned in the construction field, I saw Doug Meyer at the Headquarters of the 378th Engineer Battalion a week or so ago. Doug has designed and supervised the construction of two highway bridges with 80 spans.

I'd like to hear of your progress and accomplishments and so would the rest of the Class. — VINSON W. BRONSON, JR., Secretary, 33 Wooster Heights, Danbury, Conn.

• 1954 •

Now that summer madness is fading away, and the cool, thought-provoking days of autumn are upon us, we take another look at the wandering Class of '54 and find that the Class has really spread itself around.

Rich Wilson, Coley Bresee and Al Ward are applying their multiple talents for the Reliance Electric Company in Cleveland, Ohio. Rich, by the way, was married this summer to a certain young lady from Simmons. Coley has also fallen before the feminine onslaught and is engaged to Jan Olsen of New Jersey. Al, at latest report, was still manfully fighting off the women. Bob Reid and Betty Ann Sabin were married in June at Haverhill, Mass. Both Bob and Betty Ann are now back at Tech working toward master degrees. Frank Penny married Jeanette Geoffron of Newport, N. H., also in June. The Pennys, or should it be the Pennies, have settled in Dayton, Ohio. Dave and Pat Vogel welcomed their first-born, Daniel Cayford, on June 29. Congratulations are in order for all the above.

A good many of the boys are back at Tech for further torture. I got a letter

from Larry Leonard, and he informs me that he and Jerry Cohen are setting up bachelor quarters together while going after advanced degrees in metallurgy. Larry and Jerry both have assistantships at Tech. An article in the Burlington, Vt., Sunday News informs us that Steve Poulos has received a Tau Beta Pi fellowship for more study at Tech. Steve will "specialize in design and construction of hydraulic structures." Warren Davis has a teaching assistantship at Tech, and Paul Gray received a National Science Foundation Scholarship for further work in electrical engineering at Ye Olde Alma Mater. In the next few issues, we'll try to give a run-down on the others back at Tech. The information available at present is as of May 20, and there probably have been many changes made since then. We'll try to check our list.

Word has seeped down from Springfield, Mass., that Thad Slosek is working in the Jet Propulsion Lab at Cal Tech. John Rand is drawing his pay check at the United Aircraft Corporation division in Windsor Locks, Conn. Ed Stolfer is now Lieutenant Stolfer, and is revamping Fort Lesley J. McNair in Washington, D. C. His work, according to the Brockton, Mass., *Enterprise and Times*, "consists of drawing up specifications and charts for new facilities at the fort." The Northrup Aircraft, Inc., of California informs us that they have hired Eddie Joe Schwarz. If any of you get out to California, you might look Eddie up. He's living at 125 Sixteenth Place, Manhattan Beach. Hal Shapiro is also in California, with the Hughes Research and Development Company in Culver City. I don't have his address.

Our ever-smiling president, Dean Jacoby, and I have gotten together several times during the summer, and have devised several schemes which, we hope, will facilitate keeping the Class in touch. We have divided the country into six regions, and are endeavoring to obtain the services of a secretary in each region. The secretary will try to keep track of members of the Class in his region, and let us know what's going on so that it can be reported in the Class Notes. If anyone is interested in such a job, drop a line to Dean or to Dave Wones. Dean's address is Fairmount Addition, Alton, Ill. Dave is at 37 Bay State Road, Boston. The six regions are New England, Middle Atlantic, Southeastern, South Central, North Central and Western. We'll list the states in each region when we have the secretaries lined up. This gives you a rough idea of the regions anyway.

Dean is also interested in seeing one or more local reunions planned this year, either at Christmas time or in the spring. We're hoping to have one in Boston, and possibly another in New York. If you are interested in planning such an affair in either of these cities, or anywhere else for that matter, let either Dean or Dave Wones hear about it, and we'll be glad to help all we can.

All of the above references to Dave Wones are not without reason. Since I am spending the year in Germany, Dave has kindly consented to take over temporarily as Secretary of the Class. So, if you have any hot news, send it to Dave. — EDWIN G. EIGEL, JR., Secretary, 3654 Flora Place, St. Louis 10, Mo. DAVID R. WONES, Acting Secretary, 37 Bay State Road, Boston, Mass.

LUMMUS TO BUILD FIRST HIGH-PRESSURE ACETYLENE DERIVATIVES PLANT FOR GAF

The first commercial installation in this country for the manufacture of acetylene derivatives through high pressure techniques based on Reppe Chemistry has already passed design stage. The entire project including engineering and construction has been entrusted to The Lummus Company by General Aniline and Film Corporation—pioneer of high-pressure acetylene technology in America.

GAF research and development groups have carried investigation from laboratory scale to the building of the first U. S. pilot plant at Linden, New Jersey in 1949. Since that time, more than 30 new chemicals have been produced in semi-works quantity.

Experience gained in daily operation of the pilot plant forms the basis for design of the \$6,000,000 commercial unit at Calvert City, Kentucky—scheduled to come onstream in late 1955.

The plant involving high pressures will supply chemicals now unavailable in industrial quantities.

Among the products to be made initially are propargyl alcohol, butynediol, 1,4-butanediol, butyrolactone, 2-pyrrolidone, methylpyrrolidone, vinylpyrrolidone, and polyvinylpyrrolidone (PVP). These products have already achieved industrial applications in such fields as pharmaceuticals, cosmetics, textile auxiliaries, plastics, plasticizers, solvents, explosives, and fine chemicals. In a subsequent step, vinyl alkyl ethers and esters and their polymers and copolymers are also scheduled to be produced at the Calvert City plant.

Lummus is pleased to have been chosen for this highly specialized engineering and construction project. It is the kind of challenge that we thrive on.

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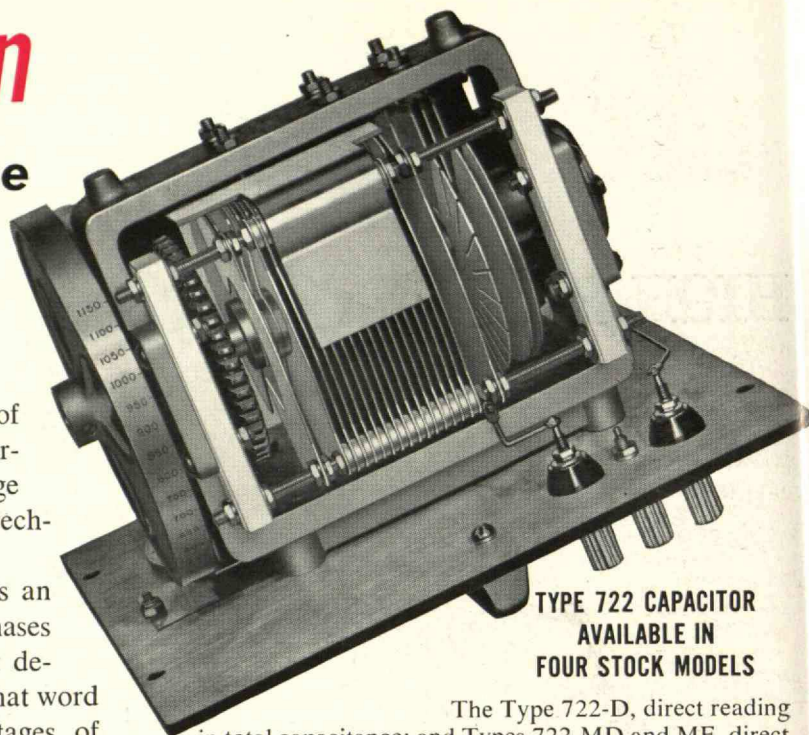
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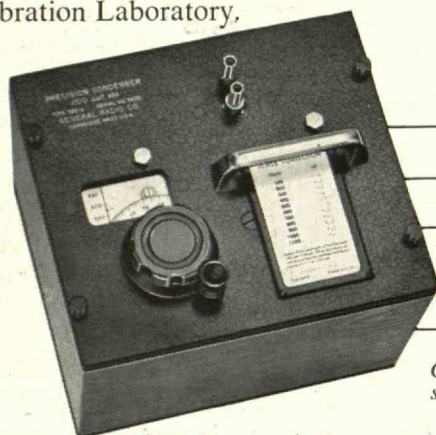
The Type 722 Precision Capacitor is the accepted *standard* of variable capacitance in the electrical measurements industry. This capacitor has had a life span of around 35 years. In this time, it has undergone continuing redesign, taking advantage of improved materials and new machining techniques.

Today, this basic electrical component is an essential precision unit employed in many phases of the electronics business. One word best describes how it has maintained its position. That word is . . . **PRECISION**. Precision in all stages of manufacture . . . in machining, in hand assembly and adjustment, and in the individual calibration to which each Type 722 Capacitor is subjected in the G-R Calibration Laboratory.



**TYPE 722 CAPACITOR
AVAILABLE IN
FOUR STOCK MODELS**

The Type 722-D, direct reading in total capacitance; and Types 722-MD and ME, direct reading in capacitance *removed* and intended for use in capacitance measurements by the substitution method. The Type 722-N is designed particularly for use at radio frequencies.



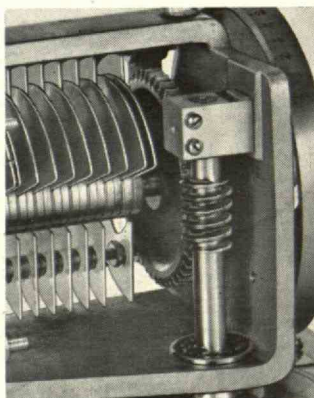
Type	Range Direct Reading (μmf)	Accuracy of Reading		
		Direct Reading	With Correction Chart Supplied	With Worm Calibration (Additional Cost)
722-D \$205	100 to 1150	$\pm 0.1\%$ $\pm 1 \mu\text{mf}$	$\pm 0.1\%$ or $\pm 0.4 \mu\text{mf}^*$	$\pm 0.1\%$ or $\pm 0.1 \mu\text{mf}^*$
	25 to 115	$\pm 0.1\%$ $\pm 0.2 \mu\text{mf}$	$\pm 0.1\%$ or $\pm 0.08 \mu\text{mf}^*$	$\pm 0.1\%$ or $\pm 0.02 \mu\text{mf}^*$
722-MD \$205	0 to 1050	$\pm 0.1\%$ $\pm 1 \mu\text{mf}$	$\pm 0.1\%$ or $\pm 0.4 \mu\text{mf}^*$	$\pm 0.1\%$ or $\pm 0.1 \mu\text{mf}^*$
	0 to 105	$\pm 0.1\%$ $\pm 0.2 \mu\text{mf}$	$\pm 0.1\%$ or $\pm 0.08 \mu\text{mf}^*$	$\pm 0.1\%$ or $\pm 0.02 \mu\text{mf}^*$
722-ME \$205	0 to 105	$\pm 0.1\%$ $\pm 0.2 \mu\text{mf}$	$\pm 0.1\%$ or $\pm 0.08 \mu\text{mf}^*$	$\pm 0.1\%$ or $\pm 0.02 \mu\text{mf}^*$
	0 to 10.5	$\pm 0.1\%$ $\pm 0.05 \mu\text{mf}$	$\pm 0.1\%$ or $\pm 0.02 \mu\text{mf}^*$	$\pm 0.1\%$ or $\pm 0.005 \mu\text{mf}^*$
722-N \$180	100 to 1100	$\pm 0.1\%$ $\pm 1 \mu\text{mf}$	$\pm 0.1\%$ or $\pm 0.4 \mu\text{mf}^*$	$\pm 0.1\%$ or $\pm 0.1 \mu\text{mf}^*$

*whichever is greater

Changes in construction or added mechanical features will be supplied on special order to suit customer's particular requirements. **WRITE FOR COMPLETE INFORMATION.**

↑ Entire capacitor is mounted in a carefully-tooled cast frame for maximum rigidity. Key areas are milled to close tolerances to insure minimum strain on capacitor plates when assembled in the casting.

The frame, plates, stator rods and spacers, and the rotor shaft are all made of the best available alloys of aluminum; all parts have same temperature coefficient of expansion. Bars of low-loss steatite support the stator assemblies, and polystyrene bushings insulate the terminals from the panel. Quartz insulation will be supplied on special order.



← A worm drive is used to obtain the desired precision of setting. To avoid "play", the worm is actually cut right in the shaft. Bearing diameters are held to within ± 0.0002 inch. The dial end of the worm shaft runs in high quality, self-aligning ball bearings; the other end is supported by an adjustable spring mounting. Radial eccentricity of the worm gear is less than 0.002 inch. Electrical connection to the rotor is made by means of a spring-silver brush running on a silver-overlay drum to assure positive electrical contact.



Type 722 Precision Capacitor is calibrated on G-R's standard calibrating equipment. The unit is artificially aged at elevated temperatures to stabilize mechanical structure.

Prices shown are NET, f. o. b. W. Concord or Cambridge, Mass.

GENERAL RADIO Company,

275 Massachusetts Avenue, Cambridge 39, Massachusetts, U.S.A.



NEW YORK 6 90 West Street

CHICAGO 5 920 S. Michigan Avenue

LOS ANGELES 38 1000 N. Seward Street